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MILITARY RADIOACTIVE EMISSIONS

HEARING

BEFORE THE

SUBCOMMITTEE ON
ENERGY CONSERVATION AND POWER

OF THE

COMMITTEE ON
ENERGY AND COMMERCE
HOUSE OF REPRESENTATIVES

NINETY-NINTH CONGRESS

FIRST SESSION

ON

H.R. 2593

A BILL TO REQUIRE THE ENVIRONMENTAL PROTECTION AGENCY TO
ESTABLISH CERTAIN STANDARDS FOR RADIOACTIVE EMISSIONS FROM
DOE ATOMIC ENERGY DEFENSE FACILITIES, AND TO MONITOR SUCH
EMISSIONS

AUGUST 14, 1985

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CONTENTS

	Page
Text of H.R. 2593.....	4
Testimony of:	
Boedigheimer, Steve, chief, Environment and Health Systems, Oregon State Health Division.....	59
Buchanan, Tom, coordinator, Hanford Campaign Division, Greenpeace, Seattle, WA.....	20
Ellison, Nancy, Division Supervisor for Air Quality, Washington State Department of Ecology.....	54
Lawrence, Michael J., manager, Richland Operations Office, Department of Energy.....	10
Oleksiak, Joanne, coordinator, Hanford Clearinghouse, Portland, OR.....	25
Schade, Charles P., health officer, Multnomah County (OR) Department of Human Services.....	53
Weiner, Ruth F., Cascade Chapter, Sierra Club.....	41

(iii)

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MILITARY RADIOACTIVE EMISSIONS

WEDNESDAY, AUGUST 14, 1985

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON ENERGY CONSERVATION AND POWER,
Portland, OR.

The subcommittee met, pursuant to notice, at 9:30 a.m., in the auditorium, Portland General Electric Building, Portland, OR, Hon. Edward J. Markey (chairman) presiding.

Mr. MARKEY. Good morning. And welcome to the Subcommittee on Energy and Conservation and Power's field hearing on H.R. 2593, the Military Radioactive Emissions Control Act of 1985.

My colleague, Congressman Ron Wyden of the State of Oregon, introduced this bill in May of this year, in order to assure that atomic energy defense facilities operated by the Department of Energy adhere to the very same standards set by the Environmental Protection Agency for commercial nuclear facilities. And further that the Environmental Protection Agency monitors compliance with such standards.

It appears that the Government factories which produce the ingredients for the most advanced means of mass destruction, nuclear weapons, are also subject to the most trusting means of regulation, self-regulation. For instance, I cannot fathom any reason why DOE facilities should be given a waiver allowing exposure limits to soar to 500 millirems, when the EPA has established a maximum exposure limit of 25 millirems for commercial nuclear facilities.

Radioactive materials know no boundaries. They do not stop at U.S. Government fences and neither should the EPA. When DOE personnel learned that 40 monitoring wells within the Savannah River Plant were contaminated with radioactive material, they emptied 400,000 gallons of water from one well, dumped it directly on the ground, so that testing would show a reduction in contamination.

If this is the way the DOE deals with a contamination problem, I suggest that it is time the EPA stepped in so that public health and safety can take a step forward.

When I read about Leon and Juanita Andrewjeski, just down river from Hanford, keeping a death map to track the untimely passing of friends and neighbors from cancer and heart disease, I believe that it is long past the time for the EPA to step in.

Unfortunately, it appears to be the case that when the Department of Energy was left to self-regulation, self-interest consistently won out over self-criticism. The mere appearance of a conflict of in-

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terest initially led the public to suspect their trust and confidence was misplaced and that appearance proved all too real.

In this case, the Department of Energy's facilities are currently operating with the dubious benefits of a double standard. Not only are these facilities self-regulated, they are held to a lesser standard. However, what is a boon to the Department is a bane to the people that live and work, overshadowed by the unknown emissions from little-known DOE plants. It is time to cast these shadows aside and to open these plants to the illumination of common sense: Third party inspection by the EPA.

Regardless of the reality hidden behind DOE's policy, the result is that people are uneasy, they are unsure, and they are afraid. Given the DOE's history for keeping secrets and revising earlier findings, their fears are not surprising, nor are they unfounded. It is about time that DOE put to rest public fears, by opening their doors to public inspection.

I can't think of any better way of gaining the trust of the public than bringing in an impartial agency, such as the Environmental Protection Agency, to monitor the emissions of the Department's nuclear facilities. It is especially critical that these facilities are subject to the same emission levels as their commercial counterparts.

The Department of Energy has been the largest single producer of radioactive waste in the United States, and I believe that the American public should be assured that they are not the single largest radioactive waste polluter.

That concludes the opening statement of the Chair. I now recognize the gentleman from Oregon who has been the leader on this issue, and requested that the subcommittee come personally to Oregon and to the Northwest to hear testimony.

Mr. Wyden.

Mr. WYDEN. Well, thank you very much, Mr. Chairman. First of all, I want to thank you for finding time in your busy schedule to come to Portland. We are aware that you just returned from the ceremonies in Hiroshima, marking the 40th anniversary of the dropping of the first atomic bomb, and that you've been on the road for quite some time now. We very much appreciate your attendance and your consideration for an issue that is extremely important to Oregon.

Mr. Chairman, I have just a few brief remarks at the outset. It seems to me that we're here today to discuss who ought to be minding the store. Whose job ought it be to guarantee the safety of the Department of Energy's defense nuclear facilities, and whose standards those facilities should have to meet.

Today, the Department of Energy, the largest single producer of nuclear waste in our country, sets its own standards for radioactive emissions in defense nuclear facilities, and monitors those standards for compliance. It's very similar to having the fox not only guard the chicken coop, but count the eggs and tell you all the chickens are fine, as well.

Not surprisingly, the system hasn't worked very well. Serious emissions problems have been either understated or unreported until years later. About the only thing that we've gotten from this

monitoring system is a credibility gap that's about as wide as the Columbia Gorge.

That's why I've introduced H.R. 2593. The legislation gets to the heart of two of the most critical issues surrounding the operation of the Department of Energy's defense nuclear facilities. Those issues are fairness and credibility.

First of all, H.R. 2593 brings some fairness to the process by saying that Department of Energy defense nuclear facilities should meet the very same environmental standards commercial nuclear facilities are required to meet. The Federal Government has set environmental standards that commercial nuclear facilities are required to meet in this country. Yet, time and time again, the Department of Energy has maintained that these standards should not apply to its nuclear facilities.

It seems to me that this is a flagrant double standard. If one set of environmental standards is good enough and necessary for commercial nuclear facilities, why is it not good enough and equally necessary for the Federal Government to meet those very same standards? Is Federal radiation any less dangerous than private or commercial radiation? I know Oregonians doubt it.

Second, my legislation establishes credibility and accountability in a process that right now has very little of either. There is just something inherently contradictory about the Nation's largest nuclear enterprise being able to monitor its own pollution-generating activities and being able to issue itself a clean bill of health.

I don't know of any other instance where a Federal agency is given such a free rein to monitor its own actions, particularly when those actions directly affect public health and safety. That's why my bill says that the Environmental Protection Agency, an independent agency whose charge is environmental protection, not nuclear weapons production, shall conduct environmental monitoring at the Department of Energy defense facilities.

I should think that the Department of Energy would want an independent monitor at its defense nuclear facilities. The Department would certainly benefit from the credibility, that an independent source would lend to the safety of their operations. Also, if the Department of Energy facilities truly are being operated to protect public health and safety, as the Department of Energy officials have said, then the Department shouldn't have any problem with an independent agency, such as the Environmental Protection Agency, making that determination.

The fact is that EPA and the Department of Energy have both stated that most Department of Energy facilities currently meet the environmental standards commercial nuclear facilities are required to meet. Given that, it's in the public interest to return some credibility to the process of nuclear regulation, and have an independent source make these determinations.

Mr. Chairman, again, we are very grateful that we have you here in Portland, and I want to tell you that I particularly appreciate your holding this hearing on my legislation. I'm looking forward to our witnesses.

Mr. MARKEY. Thank you very much for bringing the issue to our attention.

[The text of H.R. 2593 follows:]

99TH CONGRESS
1ST SESSION

H. R. 2593

To require the Administrator of the Environmental Protection Agency to establish certain standards for radioactive emissions from atomic energy defense facilities of the Department of Energy and to monitor radioactive and nonradioactive emissions from such facilities.

IN THE HOUSE OF REPRESENTATIVES

MAY 23, 1985

Mr. WYDEN introduced the following bill; which was referred jointly to the Committees on Armed Services, Energy and Commerce, and Public Works and Transportation

A BILL

To require the Administrator of the Environmental Protection Agency to establish certain standards for radioactive emissions from atomic energy defense facilities of the Department of Energy and to monitor radioactive and nonradioactive emissions from such facilities.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Military Radioactive
5 Emissions Control Act of 1985".

1 SEC. 2. RADIATION STANDARDS AND EFFLUENT LIMITATIONS
2 FOR ATOMIC ENERGY DEFENSE FACILITIES.

3 (a) STANDARDS FOR RADIOACTIVE RELEASES FROM
4 LOW-LEVEL RADIOACTIVE WASTE.—Not later than 1 year
5 after the date of the enactment of this Act, the Administrator
6 of the Environmental Protection Agency shall, by rule, pro-
7 mulgate standards for the protection of the environment and
8 the public health and safety from radioactive releases from
9 the management and disposal of low-level radioactive waste
10 at atomic energy defense facilities. Such standards shall not
11 be less stringent than any environmental radiation protection
12 standards or guidances that the Administrator may promul-
13 gate for radioactive releases from the disposal of low-level
14 radioactive waste at facilities licensed by the Nuclear Regu-
15 latory Commission.

16 (b) WATER POLLUTION STANDARDS.—Section 502(6)
17 of the Federal Water Pollution Control Act (33 U.S.C.
18 1362(6)) is amended by inserting after the first sentence the
19 following: "With respect to discharges from atomic energy
20 defense facilities (as such facilities are defined in section 5 of
21 the Military Facility Radioactive Emissions Control Act of
22 1985), such term includes source material, special nuclear
23 material, and byproduct material (as such materials are de-
24 fined in section 11 of the Atomic Energy Act of 1954).".

25 (c) RADIONUCLIDE EMISSION STANDARDS.—

1 (1) Not later than 180 days after the date of the
2 enactment of this Act, the Administrator shall, pursu-
3 ant to the authority of the Administrator under the
4 Clean Air Act (42 U.S.C. 7401 et seq.), revise the na-
5 tional emission standards for radionuclide emissions
6 from atomic energy defense facilities.

7 (2) Such revised standards shall be equivalent to
8 the environmental radiation protection standards estab-
9 lished by the Administrator for commercial nuclear
10 power operations.

11 (3) Such revised standards shall provide that an
12 atomic energy defense facility may exceed such stand-
13 ards only if the President determines that a temporary
14 and unusual condition exists at such facility and contin-
15 ued operation of such facility is in the national security
16 interest. Not later than 30 days after any exceeding of
17 such standards under this paragraph, the Secretary of
18 Energy shall submit to the Congress a report setting
19 forth the reasons the exceeding of such standards was
20 required, the extent to which the operation of such fa-
21 cility is expected to result in radionuclide emissions in
22 excess of such standards, and a schedule for achieving
23 compliance with such standards.

1 SEC. 3. MONITORING BY ENVIRONMENTAL PROTECTION
2 AGENCY.

3 (a) IN GENERAL.—The Administrator shall conduct suf-
4 ficient monitoring, on a continuous or periodic basis, to
5 permit the Administrator to analyze the extent of compliance
6 of atomic energy defense facilities with emission standards,
7 dose standards, effluent standards, effluent limitations, maxi-
8 mum contaminant levels, radiation guidances, and radiation
9 standards established by the Administrator under section 2 or
10 any other provision of Federal law.

11 (b) ONSITE MONITORING AND INSPECTION.—The Ad-
12 ministrator shall conduct such onsite monitoring and inspec-
13 tion as the Administrator determines to be necessary to carry
14 out this section.

15 (c) SPECIFIC MONITORING ACTIVITIES.—The monitor-
16 ing conducted under this section shall include—

17 (1) stack and effluent monitoring at the site of
18 atomic energy defense facilities;

19 (2) environmental monitoring of offsite areas, in-
20 cluding surface waters;

21 (3) an assessment of the cumulative levels of ra-
22 dioactive and nonradioactive materials in sediments of
23 surface waters in offsite areas; and

24 (4) any additional monitoring that the Administra-
25 tor determines to be necessary to carry out this sec-
26 tion.

1 SEC. 4. ANNUAL REPORT.

2 The Administrator shall annually submit to the Con-
3 gress a report setting forth the findings and conclusions of the
4 Administrator as a result of the monitoring conducted under
5 this Act. Each such report shall include—

6 (1) a summary of the data, findings, assessments,
7 and characterizations made by the Administrator under
8 section 3;

9 (2) an analysis of the extent of the compliance of
10 atomic energy defense facilities with emission stand-
11 ards, dose standards, effluent standards, effluent limita-
12 tions, maximum contaminant levels, radiation guid-
13 ances, and radiation standards established by the Ad-
14 ministrator under section 2 or any other provision of
15 Federal law; and

16 (3) any recommendations of the Administrator for
17 legislative or other action to ensure the compliance of
18 atomic energy defense facilities with such standards,
19 limitations, levels, and guidances.

20 SEC. 5. DEFINITIONS.

21 For purposes of this Act:

22 (1) The term "Administrator" means the Adminis-
23 trator of the Environmental Protection Agency.

24 (2) The term "atomic energy defense facilities"
25 means all facilities of the Department of Energy at

1 which any of the following functions are performed in
2 whole or in part:

3 (A) naval reactor development and decom-
4 missioning;

5 (B) weapons activities including defense iner-
6 tial confinement;

7 (C) verification and control technology;

8 (D) defense nuclear materials production;

9 (E) defense nuclear waste and materials by-
10 product management and disposal;

11 (F) defense nuclear materials security and
12 safeguards and security investigations; and

13 (G) defense research and development.

14 (3) The term "low-level radioactive waste" has
15 the meaning given such term in section 2(16) of the
16 Nuclear Waste Policy Act of 1982 (42 U.S.C.
17 10101(16)).

18 **SEC. 6. REIMBURSEMENT BY DEPARTMENT OF ENERGY.**

19 The Secretary of Energy shall reimburse the Adminis-
20 trator for any expense certified by the Administrator to have
21 been incurred by the Environmental Protection Agency in
22 carrying out the provisions of this Act.

Mr. MARKEY. Now, we're going to turn to our panel of witnesses, and what we're going to ask from our witnesses, is that they keep their opening statements to 5 minutes. Now, we are going to closely monitor that request, and there will, in fact, be a very precipitous cutoff of the testimony at that 5-minute point.

So we ask that as best as possible, that you summarize your statement so that it in fact comes in under that 5-minute limit, and that will allow the congressional panel, then, to toss more questions at you, and I promise you, you'll get more than your share of time during that period to be able to get in your shots on the issues.

We will begin with Mr. Michael Lawrence, who is the manager of the Richland Operations Office for the Department of Energy. And we thank you very much for appearing, this morning, Mr. Lawrence. And we would ask that you begin, but, again, try to abide by the 5-minute limitation.

STATEMENTS OF MICHAEL J. LAWRENCE, MANAGER, RICHLAND OPERATIONS OFFICE, DEPARTMENT OF ENERGY; TOM BUCHANAN, COORDINATOR, HANFORD CAMPAIGN DIVISION, GREENPEACE, SEATTLE, WA; JOANNE OLEKSIK, COORDINATOR, HANFORD CLEARINGHOUSE, PORTLAND, OR; RUTH F. WEINER, CASCADE CHAPTER, SIERRA CLUB; CHARLES P. SCHADE, HEALTH OFFICER, MULTNOMAH COUNTY, OR, DEPARTMENT OF HUMAN SERVICES; NANCY ELLISON, DIVISION SUPERVISOR FOR AIR QUALITY, WASHINGTON STATE DEPARTMENT OF ECOLOGY; AND STEVE BOEDIGHEIMER, CHIEF, ENVIRONMENT AND HEALTH SYSTEMS, OREGON STATE HEALTH DIVISION

Mr. LAWRENCE. Thank you, Mr. Chairman. I appreciate the opportunity. I have prepared written testimony, and I'll submit that for the record, and summarize, as you've requested.

As you know, Mr. Chairman, the Department of Energy employs known experts, internationally recognized experts, in the field of safety and environmental and health monitoring, plus we have state-of-the-art equipment that has been developed over the years, which goes far beyond anything else commercially available for monitoring radioactive releases.

The Department has a multitiered level of safety within the Department, from its contractors to its field offices to headquarters, itself, where the line management responsibility for safety rests with operations. But an independent safety organization exists at each level to ensure safety, and that independent organization has the capability to shut down operations if those operations are not being conducted safely.

In short, the Department is responsible, concerned, expert, and up to date in the fields of radiation monitoring and environmental health and safety. Safe, environmentally acceptable operations are the prime objective of the Department, and Secretary Herrington. It's our highest priority. And I'm sure it's with that intent that Congressman Wyden introduced this bill, to ensure and protect public health and safety.

However, we do oppose this bill, and we strongly oppose it, because it would not, in our opinion, in any way increase or improve public health or safety, would require a duplication of work which would be an added expense to the taxpayer, and the bill itself implies that we are not meeting standards or comparable standards to the EPA and State and other Federal regulations which, in fact, we are. So I appreciate this opportunity to correct those misimpressions.

The bill would require DOE to meet emission standards used by commercial facilities, implying that the DOE does not meet these standards at the present time. That is not the case. DOE is subject to similar standards or standards identical to commercial nuclear facilities under section 112 of the Clean Air Act, other statutes, including the Clean Water Act, Resource Conservation Recovery Act, and the Safe Drinking Water Act.

It has always been, and continues to be, departmental policy to implement environmental standards that are at least as stringent as those developed by the Nuclear Regulatory Commission, the EPA, and other Federal agencies, involved in setting such standards.

DOE has invested hundreds of millions of taxpayers' dollars over its 35 years of operation on research to determine the effects of radiation to man and the environment and, as a result, more is known about the health effects of radioactive substances than any other toxic substance.

The House legislation would also transfer monitoring responsibility from DOE to EPA. This is a different role than EPA traditionally has at the present time, whereby EPA requires the operator to monitor his emission and report on any deviations of standards. The EPA, and other agencies that it might so delegate, does periodic monitoring or checking, but it is the operator's prime responsibility to do the monitoring himself, similar to what DOE does right now.

In any case, the legislation would not—and I strongly urge—should not, relieve DOE of its legal obligation to ensure the safety of its workers and the public to comply with environmental standards.

At the present time, we estimate that in 1986, \$383 million will be spent by the Department on environmental monitoring. The new legislation would then require the DOE to reimburse EPA for anything that they do in this area, with no check and balance on their expenditures whatsoever. This represents a costly duplication of effort and unnecessarily escalates spending.

In addition, I might add, many State agencies and the EPA are already asked by DOE to come and check, and I have, on several occasions during this past year, asked State monitors to come and check our operations. And we have an agreement underway right now with the State of Washington, whereby we would allow and have the State on board to do monitoring. And they, in fact, have set up some very preliminary monitoring equipment now, and we're hoping to increase that.

Recently, also, we had worked with the States of Washington and Oregon to have a four-way monitoring effort with Greenpeace to check the radioactive levels in the Columbia River. I think this is

the type of thing that will help establish credibility without the needless duplication of effort that I think the bill would provide.

DOE monitors its effluents and emissions to be as low as reasonably achievable. The emissions must be within standards. Results of both the effluent releases and monitoring are compiled and released annually, subjected to peer review, and earlier, in July, we just had a workshop with the State of Washington going over our environmental monitoring report for 1984. This was a very productive meeting, where we were able to discuss, scientist to scientist, the numbers that we got, and their significance. We received many good comments from participants at that meeting. Minor improvements will be made to our monitoring program report as a result.

When looking at the public health and safety and the safety of our workers, essentially 85 percent of all workers for DOE who are exposed to radiation in radiation zones are below the exposure that you and I receive just from living in the United States. And none of these workers has been exposed to radiation levels for workers greater than the Federal permissible limits.

Radiation exposure to the public at most DOE sites is virtually undetectable. The calculated doses to the public are generally less than one-tenth of 1 millirem, far below the standards that exist.

In summary, the DOE currently has responsibility for monitoring radioactive and nonradioactive emissions from its site. This publicly available monitoring data is released annually and subjected to independent technical review. As with any large complex operation, some problems have occurred in the past, but these have been the exception rather than the rule.

The DOE fully recognizes and accepts its responsibility to be held accountable for the safe and environmentally acceptable operations of its facilities. I believe the DOE has done an excellent job in meeting these goals in the past, and has done so in a safe environmentally acceptable manner.

Consequently, we do oppose H.R. 2593, because it doesn't do anything to increase public health or safety, and it will not improve the quality, objectivity, or reliability of the DOE's activities in this area.

Thank you.

[The prepared statement of Mr. Lawrence follows:]

H.R. 2593--MILITARY RADIOACTIVE EMISSIONS CONTROL ACT OF 1985

Statement by

Michael J. Lawrence

Manager, Richland Operations Office, Department of Energy

House Energy and Commerce Committee

Subcommittee on Energy Conservation and Power

Portland, Oregon

August 14, 1985

We at the United States Department of Energy (DOE) have considered the effects of H.R. 2593, "Military Radioactive Emissions Control Act of 1985." We want to thank you, Mr. Chairman, for this opportunity to comment on the Bill.

As you know, the DOE employs directly, or through contracts, recognized experts in safety and radiological monitoring. We have a staff of experienced professionals of unsurpassed and uncompromised expertise in this field.

We have developed state-of-the-art monitoring equipment with a capability that, to the best of our knowledge, is beyond anything currently available to anyone else in the world. We use this equipment to monitor our projects and we report the results in publicly available documents as part of our responsibility to protect our employees and the public welfare.

We have a multi-tiered management structure of contractor, Operations Office and Headquarters, with a safety office at each level with the authority to stop work if a safety or environmental concern exists, coupled with the line management responsibility for safety. We believe this emphasizes a deep-rooted and sincere concern for safety and the environment. In fact, this in-depth organization, devoted to safety and environment, is above and beyond anything currently required in the commercial nuclear industry, or, indeed, anywhere else.

In short, we believe we are an agency that is responsible, concerned, expert, and up-to-date in matters of safety and environmental protection, including radiological monitoring and protection.

We at the DOE oppose this particular bill and oppose it strongly for the reasons I will explain. The bill, as written, will not, in our opinion, achieve the desired intent of even further assuring the health and safety of workers at DOE sites, the general public, and the environment. In addition, the duplication of work required by this bill will result in unnecessary and wasted expenditure of taxpayer dollars.

The legislation, if enacted, would have two separate requirements. First it would require the Environmental Protection Agency, rather than DOE, to monitor radioactive and nonradioactive emissions from DOE Atomic Energy defense facilities. Second, it would require the DOE facilities to meet emissions standards at least as stringent as those for commercial nuclear facilities.

The second requirement appears to be based on a misunderstanding of the DOE policy regarding worker exposure.

H.R. 2593, as written, would force the DOE to meet emission standards used for commercial nuclear facilities, implying that the DOE is not currently meeting these standards. This is just not the case. Under current law, the DOE is subject to similar standards or standards identical to commercial nuclear facilities under Section 112 of the Clean Air Act and other statutes, including the Clean Water Act, Resource Conservation and Recovery Act, and Safe Drinking Water Act. This includes obtaining appropriate permits and licenses. In any case, it has always been, and continues to be, the policy of the DOE to implement environmental standards that are at least as stringent, and in some instances more stringent, than those developed by the Nuclear Regulatory Commission, EPA, and other federal agencies involved in establishing such standards.

The DOE continually revises its standards to meet any new or revised requirements. We would also like to point out that the DOE has been the forerunner in the development of standards of safety with regard to radiological industrial practices in the work environment and the protection of the public health and safety. The DOE has invested hundreds of millions of dollars over the past 35 years on research to determine effects of radiation to man and the environment; and as a result, more is known about the health effects from radioactive substances than any other similar toxic substance. In fact, the DOE and its contractors provide the experimental data which is used for the establishment of many NRC standards through the use of facilities such as the Loss of the Fluid Test Facility (LOFT) and the Power Burst

Facility (PBF). The DOE also supports other federal agencies in response to radiological incidents such as support to NRC during the Three Mile Island accident. Finally, the DOE is an important participant on the Committee on Interagency Radiation Protection Research Policy Coordination (CIRPRPC) sponsored by the White House to review federal radiation policy and support research in the development of radiation exposure standards.

The House legislation would also transfer the monitoring activities from the DOE to the EPA. This appears to put the EPA into a different role from the one it currently performs. The EPA currently requires the operator to monitor his emissions and report on any deviations from standards. The EPA, while authorized to conduct compliance monitoring, currently only performs periodic inspections of the operator's monitoring program, but does not perform the actual monitoring. In any case, the legislation would not, and should not, relieve the DOE of its legal obligation to ensure the safety of workers and the public and ensure that operations comply with environmental standards. Therefore, it is the DOE's position that the DOE would need to continue its existing and extensive monitoring activities (\$383 million in FY 1986). The new legislation would then require that we reimburse the EPA as well, for redundant monitoring work. This represents costly duplication of effort and unnecessarily escalates federal spending.

As I indicated, the DOE uses a multi-tiered approach to accomplish its mission. Each of these tiers consists of an organization responsible for operating facilities in a safe and environmentally sound manner, as well as an independent organization whose sole responsibility is to oversee the safety of operations. This three level management structure, with independent oversight activities, essentially provides three times the inspection/enforcement capability than is generally available to the very safest commercial nuclear facility operations. In addition, many State agencies and the EPA already provide independent assessment of the compliance of the DOE facilities with emission standards, where applicable.

The DOE monitors radioactive effluents and emissions at the source to insure that releases are as low as reasonably achievable (ALARA). In all cases however, the emissions must be within standards. In addition, extensive onsite and offsite environmental monitoring is performed. The results of both the effluent releases and environmental monitoring are compiled into extensive and comprehensive reports issued annually and made available to the public. These reports continue to show that undesirable health effects from the 35 years of the DOE operations have been negligible. In addition, the DOE conducts epidemiological studies and supports studies conducted by independent organizations. These studies likewise have not shown any significant health effects from the DOE operations.

Finally, Mr. Chairman, the proposed legislation does not in any way enhance the protection of the environment or reduce the risk to public health and safety. There has been no evidence of injury or death to a member of the public due to radioactive and/or nonradioactive emissions as a result of the DOE's more than 35 years of plant operations. The injury, lost work day, and fatality rates for workers at the DOE installations are well below the average for U. S. industry.

A 1983 evaluation of a DOE radiation worker population of 85,324 showed that fully 85 percent of the workers received whole body exposures of less than the average background exposures in the U. S. Only 300ths of 1 percent of the workforce were exposed to 4-5 rem. No one was exposed to higher than that. The federal occupational standard for radiation workers is 5 rem per year. The average national exposure from background radiation is 0.1 rem per year.

Radiation exposures to the public at most of the DOE sites are virtually undetectable. Even in the worst case, exposure to the general public is within allowable federal guidelines. At the large Hanford site, doses to the general public must be calculated because the radiation levels beyond the DOE site boundaries are nearly impossible to distinguish from background levels. These levels are so low, in fact, that we simply cannot measure them. The calculated doses to the public are generally less than 0.0001 rem per year. The federal standard for radiation dose to an individual member of the public is 0.1 rem per year.

The DOE currently has responsibility for monitoring radioactive and nonradioactive emissions from its sites. This publically available monitoring data is released annually and subjected to independent technical review. As with any large, complex operation, some problems have occurred in the past but these have been the exceptions rather than the rule. The DOE fully recognizes and accepts its responsibility to be held accountable for the safe, environmentally acceptable operations of its facilities. We believe the DOE has done an excellent job of meeting the goals and objectives of national security and has done so in a safe and effective manner.

In summary, we want to reiterate that the DOE strongly opposes this legislation. H.R. 2593 does not add anything that is different from what the DOE already does to monitor and protect the public and the environment from exposure to radiation, consequently, H.R. 2593 is unnecessary. It would not improve the quality, objectivity, or reliability of the DOE's activities in this area; nor, we believe, would it relieve the DOE of the duty to insure the health and safety of its workers. Finally, we would like to thank the committee for this opportunity to correct any public misunderstanding of the emission standards the DOE meets to protect its employees, the public, and the environment.

Mr. Chairman, this concludes my prepared statement. I'll be glad to answer any questions you or other members of the subcommittee may have.

Thank you.

Mr. MARKEY. The gentleman's time has expired. I think you were able to get in the bulk of your statement.

The next witness is Mr. Tom Buchanan, who is from the Hanford Campaign Division of Greenpeace, in Seattle, WA.

Welcome, Mr. Buchanan.

STATEMENT OF TOM BUCHANAN

Mr. BUCHANAN. Thanks for letting me speak today.

I just have two examples that I'd like to bring up real quickly, and I'll keep a watch on myself, too.

In August 1984, a prairie fire swept through the Hanford Reservation, and it burned reservation sagebrush and with the combined desert ecology, released a smoke plume that was seen for miles. The fire was seen as far away as Pasco, and it burned for over a week, and blackened over 250,000 acres.

During that time, Rockwell Management was concerned enough about the radioactive particles combining with the desert fire, that they employed fire crews to beat out the fire around the 200 area where the PUREX plant is.

They also recommended that workers avoid direct contact with the smoke plumes, if possible. It was not possible for the fire crews to avoid the smoke, however, and they were given no special protection.

I asked Keith Price at the meeting that Mike Lawrence just mentioned we had in Lacing at the technical review meeting, why Battelle did not monitor this prairie fire that released over 40 years of accumulated radioactivity on the ground in the dust and in the plant ecology. Mr. Price said, "I admit to the oversight of not monitoring the fire, but we have nothing to report."

Judy Torqaz of Rockwell's Public Relations then admitted later on, in an FOIA request by Larry Caldwell, that the technical staff had measured the smoke at 400 feet above the ground level, and found that there were no levels above background. So there's a real contradiction here. There's two people who gave testimony, or at least gave opinions, one said that there was no measurements taken, and another person said there was measurements.

Both said, however, that there was nothing detectable in this huge smoke plume that took place. This was in August 1984.

The reason that we are concerned about this is, that I had a discussion with Russell Jim, who's a nuclear waste coordinator for the Yakima Indian Nation. They are located in Toppenish, 40 miles to the west of the Hanford Reservation. They've been relocated 4 years ago by the placing of the Hanford site.

Russell remembers the fire; he has no memory lapses like Price or Torqaz. Russell says the first day of the fire, the wind blew east, away from the Toppenish reservation. On the second day, Russell says the wind blew west over 40 miles to finally disperse over the Toppenish reservation. The second day, he noticed that smoke, as well as a number of other people at the reservation. One week later, the chokecherry crop, which is an indigenous food of the Yakima Indians, died on the trees.

In the health physics profession, we have a name that describes the chokecherry's role in the science of radiation detection. It's

called, "Living Indicators." And, in this case, the living indicators died.

We accuse Rockwell and Battelle management of not providing information, and not that they have memory lapses, but that they're stonewalling on this data of August 1984. And we want an immediate release of all monitoring and measurement data of that August fire.

One more example, which is even a little more complex, that we are concerned about. In January 1984, 3 months after the restart of Purex, there was an agitated technical worker from Purex that made a phone call to Joel Connelly, a reporter for the Post Intelligencer in Seattle.

He said that there was so much plutonium being released from the stacks at the PUREX plant, that they were considering evacuating Pasco, which is a town southeast of the plant about 30 miles. Peggy Bennett, 2 days later, of the Rockwell Public Relations Office, said that "the releases at the stack were no more harmful than standing in your rock-lined basement."

After receiving the raw data from the stack emissions, with an FOIA, the Fellowship of Reconciliation of Portland made the data available to two investigative journalists, Tim Conner and Larry Shook.

They analyzed the data and brought it to Dr. Allan Benson, who then analyzed it as well. That was also checked by two peers, Dr. David Albright and Dr. John Shepard.

On July 25, about 6 months later after the increased plutonium releases were detected at the stack, Rockwell finally sent a letter to Benson, Shook & Conner. They began to change their tune. In that letter, they said:

Yes, it is correct that more plutonium came off the stack than we intended to release and more than what predicted levels were projected from our 1982 EIS on the restart of Purex.

At a highly unusual press conference, August 22, 1 month later, under very tight security near the PUREX facility, with only a few select journalists that were able to attend, and Conner & Shook had to insist to attend, with 13 of Rockwell's technical people, Rockwell continued to confirm that they had released more plutonium particles than they had stated in January 1984. That was 7 months later.

[The prepared statement of Mr. Buchanan follows:]



TESTIMONY IN SUPPORT OF HR 2593

August 14, 1985

by Tom Buchanan, Coordinator, HANFORD CAMPAIGN

Why has Greenpeace come to Hanford? Throughout our 14 year history, we have always stressed the extreme hazards of nuclear testing, weapons and waste production. Here in the Northwest, Hanford is the single most hazardous point of plutonium production in the world. Added to this most toxic substance, plutonium, is the huge and growing commercial and military waste dump currently leaking under the Eastern Washington desert floor. In 1985, it adds up to the world's greatest concentration of radioactive wastes improperly stored at the Hanford Nuclear Reservation.

Today, here in Portland, Greenpeace joins in support of Rep. Ron Wyden's bill HR 2593 to require the EPA, rather than the DOE, to monitor all radioactive and hazardous emissions from all weapons facilities like the Hanford site. Further, we support the bill's requirement that DOE weapons facilities meet on-going emissions standards at least as stringent as commercial nuclear plants. The Clean Air and Water Acts' standards will also regulate the bomb production facilities. Finally, we recommend that the EPA is required to seek approval of the initial setup and on-going surveillance monitoring from other independent agencies such as the USGS and the Federation of American Scientists.

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After recently completing the Columbia Tour with the sailing vessel, "Alcyon" Greenpeace joins with 2 scientists, Stales and Magale who formerly worked for Rockwell International at Hanford in accusing the managers of Rockwell Hanford Operations of an intentional campaign of deceit in withholding serious radioactive contamination of the environment from public scrutiny. Mr. Lawless, a former US DOE engineer and waste management expert adds his voice to the previously mentioned scientists and Greenpeace in calling for a complete and comprehensive listing of the sources and levels of all radiologic contamination released from the Hanford site since 1943.

Greenpeace wishes to enter into the public record of this hearing several examples of Rockwell Hanford's deceitful self-regulation.

In August of 1984, a prairie fire swept through the Hanford sagebrush and accompanying desert plant ecology releasing a smoke plume that was seen for miles. Eventually, the fire whose flames were sighted as far as Pasco burned for over a week and blackened over 250,000 acres of desert flora. The Rockwell management was concerned enough about radioactive particles combining with the desert fire that they employed fire crews to beat out the fires around the production facilities in the 200 area. They also recommended that workers avoid direct contact with the smoke plumes, if possible. It was not possible for the fire crews to avoid the smoke however, and they were given no special protection.

I asked Keith Price, director of Battelle's Pacific Northwest Laboratory, at the technical review of the 1984 Environmental Monitoring Report at Hanford, why Battelle did not monitor the prairie fire's smoke plume that released over 40 years of accumulated radioactive dust that had collected on the desert plant ecology. Mr. Price said, "I admit to the oversight of not monitoring the fire, but we have nothing to report." Judy Torgas of Rockwell's Public Relations, admitted in a FOIA request by Larry Caldwell, that the technical staff had measured the smoke at 600 feet and above but that no levels were found above background. There's a contradiction between their words. Did they measure the smoke with an aircraft? What do they measure as background with plutonium gases and particles? When did they

A NON-PROFIT
TAX-EXEMPT
ORGANIZATION

measure the smoke? We of Greenpeace are sending in an FOIA demanding Mike Lawrence to release all the data and measurement circumstances around the 1984 August fire. The larger issue is why does Rockwell-DOE feel that it has to hide radiologic evidence from public scrutiny.

Are we as concerned citizens just too paranoid about radioactivity? Not after we heard a story told by Russell Jm, nuclear waste coordinator of the Yakima Indian Nation at Toppenish 40 miles west of Hanford. Russell remembers the fire. He has no memory lapses like Price and Torgar. Russell says the first day of the fire, the wind blew east away from the Toppenish reservation. The second day, Russell says the wind blew west with over 40 miles to disperse the smoke before hitting the Yakima Reservation. One week later, the chokecherry crop, an indigenous food for the Yakima Indians, died on the trees. In the health physics profession, they have a name that describes the chokecherry's role in the science of radiation detection: "Living Indicators." And in this case, the living indicators died. We accuse the Rockwell and Battelle management not of memory lapses, but of stonewalling this data on the August, 1984 fire. We want an immediate release of all monitoring and measurement data of the August fire.

Another telling example of Rockwell-DOE's intentional campaign of informational deceit is in not providing the public access to its scientific studies. We are now entering into the public record a 2 page list of documents with an FOIA request as of July 19, 1985, that have either been classified as "secret" or documents that have been systematically removed from 3 public libraries. The marked "secret" documents have come to us after discovery in the bibliographies of unclassified AEC-DOE documents. As the reader should note, titles such as "Reactor Effluent Water Disposal" and "Radioactive Contamination in the Hanford Environs for October, November and December 1955" certainly will have no immediate threat on national security if released to the public. Indeed, every day that Rockwell-Hanford delays in not releasing these studies increases their collaboration in a coverup. Greenpeace calls for an immediate FOIA on these two pages of documents held from public scrutiny, and we call for an immediate release of all historical data on environmental radiologic releases at the Hanford site since day one.

Our final example of the reporting of radioactive releases from PUREX should suffice to show that DOE and Rockwell are not providing honest reporting to the public. In January, 1984 a very agitated technical worker from PUREX called Seattle reporter, Joel Connelly, to say there was so much plutonium being released at the stack that the management was considering evacuating Pasco. Several days later, Peggy Bennett, of the Rockwell Public Relations Office, said, "the releases at the stack were no more harmful than standing in your rock-lined basement." After receiving the raw data from the stack emissions with an FOIA, the Fellowship of Reconciliation of Portland made the data available to two investigative journalists, Tim Conner and Larry Shook. They then took the data to Dr. Allan Benson, an analytical chemist from Spokane, who analyzed the computer printout of raw data. He reported back to Conner and Shook, "This is all plutonium releases at very significant levels." Conner and Shook then had Benson's findings confirmed by Drs. David Albright and John Shepard. On July 25, 1984 6 months after the increased plutonium releases were detected at the stack, Rockwell finally sent a letter to Benson, Shook and Conner. They began to change their tune. In that letter, they said, "Yes, it's correct that more plutonium came off the stack than we intended to release and more than what predicted levels were projected from our 1982 SIS on the restart of PUREX."

At an highly unusual August 22 press conference, held under tight security near the PUREX facility with only a few select journalists (Conner and Shook had to insist to get invited) and with 13 of Rockwell's technical people, Rockwell continued to confirm that they had released more plutonium particles than they had stated in January.

1964, and more than Franklin Standafer, Assistant Manager for Defense Programs, who testified at a June 15 hearing at a subcommittee at the Washington State House that, "there were no increases of plutonium at the PUREX facility." At that press conference, Paul Lorenzini, vice president and manager of operations confessed that Rockwell had known since January 25 that it was producing more plutonium releases up the stack. This directly contradicts Standafer's testimony at the State House subcommittee. The admission by the technical staff was that up to 40 times the predicted levels of plutonium has, had and still is being released into eastern Washington and Oregon's atmosphere. In fact, the Rockwell management more than doubled their own plutonium standards just to allow for the increased radioactive pollution.

The 13 Rockwell scientists all agreed on the increased levels of plutonium but still disagreed with the levels that Dr. Benson reported. They said that Benson misread the data and was not counting the less hazardous Bismuth 212 and Thorium daughters. Since DOE-Rockwell would not allow Dr. Benson (who after all was just a scientist and not part of the press) at the August 22 meeting; still another meeting was scheduled. Finally on Sept 12, Dr.s Donald Biehl, Donald Payne and Gary Truger met with Dr. Benson. The Rockwell people finally admitted that Dr. Benson's reading of the plutonium releases was corrects up to 40 times the predicted levels were and still are coming off the 200 area stack at PUREX.

Now to the conclusion of all this. First very few of the press, overworked and under deadline pressure, have the time or skill enough to research this chain of events. Second, not more than two dozen of the general public has ever had all the information on this plutonium escape that is still happening at the PUREX site. But we now know that up to 40 times greater amounts of plutonium are coming off the stack than predicted by Rockwell's EIS. We now know that some managers, like vice president Standafer willing gave misinformation about the plutonium releases to a governmental body and that other officials like Mike Lawrence still will not admit to the increased levels of plutonium releases. Since January, 1964, the haunting question remains: what about the first 17 years of PUREX operation? How many accidents, incidents and high level releases came off the stack? what about the other 7 or 8 plutonium reprocessing facilities on the Hanford Site? These facilities like the U plant, the Z plant and the T plant operated many years without emission filters on their stacks. How much plutonium was released off these sites? How much has accumulated in the air, soil, flora and fauna of the Northwest?

Greenpeace thanks Rep. Wyden and Markey for the opportunity to present testimony on the issue of independent monitoring at the Hanford. We hope to call a halt to the production of nuclear weapons which by their creation is endangering the health of us all here in the Northwest.

Mr. MARKEY. The gentleman's time has expired.

The next witness is Joan Oleksiak, from the Task Force on Hanford, from Portland, OR.

STATEMENT OF JOANNE OLEKSIK

Ms. OLEKSIK. Thank you. I have a correction. It's Joanne Oleksiak.

Mr. MARKEY. Joanne.

Ms. OLEKSIK. Right. And I work with the Hanford Clearinghouse. It's a citizen's resource center for information on the Hanford Nuclear Reservation here in Portland.

That organization began because there has been so much concern about Hanford's facilities there in this area.

I thank you very much for the opportunity to testify here this morning. And I'd like to begin with a little bit of background. Any discussion of radioactive emissions from DOE nuclear facilities would not be complete without understanding the surge in nuclear materials production which has been taking place since 1980. Even the Department of Energy is well aware of the increased environmental damage which will be caused by the dramatic increase in nuclear materials production.

This is shown in a letter from DOE Director of Energy Research, Alvin Trivelpiece, written to the Environmental Protection Agency. He said, "Standards proposed by the EPA to regulate airborne contamination should have been withdrawn." He argued, "because it would lead to increased costs for DOE arising from litigation and from bringing DOE facilities into compliance."

Of the costs cited by Trivelpiece, were: The costs of complying with the proposed standards, if increased production activities are required and the costs of shutdown of operations if it is not possible to comply with the proposed standards at certain facilities.

I've included a letter, along with my testimony, that shows that the DOE has actively lobbied against EPA standards.

It would be difficult to find a more clear statement of the conflict of interest that the Department of Energy has in producing nuclear materials for an expanding nuclear arsenal, than its purported role of policing its own operations, and protecting public health and safety at the same time. Critics of this plutonium buildup also include former Department of Defense scientific adviser, George Rathjens. The DOE, he said, invoked the time-honored "shortage" argument in order to provide plutonium for warheads not yet authorized by Congress.

In reality, he continued, the DOE is attempting to build a costly multibillion dollar surge capacity above and beyond arsenal requirements.

To compile a list of inadequate or misleading information disseminated from the Department of Energy would make quite a long list. We must start now, not only to regulate DOE emissions, but to make information available about past practices. Residents of the northwest will be among those who will pay the ultimate price in terms of deaths from cancer and other health problems and permanent environmental damage caused by radioactive contamination.

Future generations may look back on the shaky justification for renewed plutonium production and wonder why it was that the environment where we and our neighbors live, work, and play, had to be sacrificed on the altar of national security.

In the long run, the rationale for producing more nuclear weapons must be challenged, if a livable environment is to be preserved on this planet.

H.R. 2593 is a good first step in a new direction, to eliminate DOE's self-policing responsibilities and place those in the hands of the Environmental Protection Agency. While I can applaud this move, it must be said that that alone will not be enough to assure the safety and health of northwest citizens.

This is why I join with others today in urging that the following steps be taken.

A comprehensive listing of all DOE releases of radionuclides at the Hanford Reservation from past operations should be made public.

An independent study should be done now on the levels of radiation in the Columbia River. There is every indication that the river is in massive jeopardy at this time.

And third, begin a thorough and independent study of soil contamination and the impact to farms.

Larry Shook of Spokane's Hanford Education Action League has said:

The public has a right to know that cannot be disputed. We face economic dislocation of an unprecedented scale; if it is possible to produce nuclear weapons safely, it is incumbent upon the Department of Energy to prove it—and they cannot do that by regulating themselves.

I hope, also, that in future hearings regarding this bill, independent scientists—

Mr. MARKEY. The gentlewoman's time has expired.

[Testimony resumes on p. 41.]

[The prepared statement and attachment of Ms. Oleksiak follow:]

Hanford Clearinghouse

Room 408, 408 S.W. 2nd Ave., Portland OR 97204, 295-2101

TESTIMONY REGARDING HR2593

MILITARY RADIOACTIVE EMISSIONS CONTROL ACT OF 1985

AUGUST 14, 1985

JOANNE OLEKSIAN, COORDINATOR, HANFORD CLEARINGHOUSE

At the center of Hanford's many plutonium production and processing facilities is the plutonium uranium extraction facility called PUREX. It is the world's largest nuclear fuel processing plant. After an 11 year hiatus- PUREX resumed operations in November 1983; the beginning of what will be a 16 year long campaign of processing. In that time at least 18 metric tons of weapons plutonium will be separated; or enough to build thousands of Nagasaki sized bombs.

Because this production will substantially add to the radioactive contamination at Hanford already, in addition to posing regional health risks- giving rise to the question why are our existing 25,000 or more weapons not enough? Logic cannot answer that question.

But to meet that additional need for plutonium, "PUREX will raise the U.S. stockpile of weapons grade plutonium to well over 100 metric tons", so says a report by Tim Connor, included in a booklet titled The Hanford Report. The U.S. Department of Energy asserts that even the most redimentary information connecting weapons material production to military objectives is the stuff of national secrets. What that means in practice is that the government has effectively removed the option of allowing the public to review and debate the health safety and environmental risks associated with these facilities."

A discussion of radioactive emissions from DOE nuclear facilities would not be complete without understanding the 'surge' in nuclear materials production which has been taking place since 1980. Even the Dept. of Energy is well aware of the increased environmental damage which will be caused by the

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Page 2 Hanford Clearinghouse testimony

dramatic increase in nuclear materials production; as is shown in a letter from DOE Director of Energy Research Alvin Trivelpiece to the Environmental Protection Agency. Standards proposed by the EPA to regulate airborne contamination should have been withdrawn; he argued, because it would lead to increased costs for the DOE arising from litigation and bringing DOE facilities into compliance. Other costs cited by Trivelpiece were: "The costs of complying with the proposed standards if increased production activities are required... /and/ the costs of shutdown of operations if it is not possible to comply with the proposed standards at certain facilities; and the costs of assuring compliance with the proposed standards without exception for an unusual occurrence or accidental release".

It would be difficult to find a clearer statement of the conflict of interest that the Dept. of Energy has in producing nuclear materials for an expanding nuclear arsenal and its purported role of policing its own operations and purported role of policing its own operations and protecting public health and safety.

Critics of this plutonium build-up include former Dept. of Defense scientific advisor George Rathjens. The DOE, he said, invoked the "time-honored" "shortage" argument in order to provide plutonium for warheads not yet authorized by Congress. "In reality," he continued, "the DOE is attempting to build a costly multi-billion 'surge' capacity above and beyond arsenal requirements".

In this hot pursuit of weapons grade plutonium by the Dept. of Energy the PUREX plant reopened 5 months ahead of schedule in 1983 (instead of spring 1984) and during its first year and a half of operations the plant was plagued with problems.

One incident was detailed by reporter Karen Dorn Steele in a Dec. 2, 1984 article in the Spokane Spokesman Review. The loss of 10 to 13 kilograms of plutonium remained unaccounted for at the conclusion of a nearly two month long inventory of nuclear materials.

Due to a Hanford scientists decision to blow the whistle about the missing plutonium - his reaction to public statements of Hanford officials that there was nothing unusual about the inventory or its results.

But the production push at PUREX; the scientist said; had a great effect on the "N-cell" where the plutonium oxide is packaged for shipment. "The push for production was so heavy /that/ down where they load out the powder /there was/ no time to clean up; they just kept running, kept loading the powder into cans and shipping it out".

The hurrying resulted in a plant emergency requiring inspectors to scour the work areas in N-cell at PUREX and retrieving an unspecified amount of plutonium.

In this case, the incident helped to force an evaluation of inventorying practices that now require two a month rather than the annual inventory required

page 3 Hanford Clearinghouse testimony

for weapons grade materials. But had it not been for the anonymous scientist whose decision to talk to the press led to public pressure about missing plutonium, this more stringent requirement might never have been added.

Aside from the stress of meeting DOE production demands for plutonium workers in facilities experience other health risks.

The Environmental Policy Institute, a public interest organization, said in July 1985, that documents obtained from the government show increased risks of cancer and other diseases at several DOE facilities. Bob Alvarez, of EPI said the reports showed an increase cancer risk for some workers at the Hanford Nuclear reservation.

Compiled from DOE fact sheets and published and unpublished papers; the report included this assertion:

A 1979 internal report for the Nuclear Regulatory Commission found that DOE made statistical changes during a study of workers at Hanford to dispute earlier findings of increased risks there. The risk of dying from radiation induced cancer of the bone marrow, pancreas and lung at Hanford appeared to be 10 to 30 times greater than current worker protection standards assume, the report said.

A study published by Dr. Johnson stated that workers who have only 1% to 10% of the body burden of plutonium permitted by federal guidelines (400 to 4,000 picocuries) have a 33% increase in chromosome aberrations in the circulating lymphocytes, compared to fellow workers who don't have these body burdens. Rocky Flats plutonium workers had a ratio of lung cancer 25% higher than expected, and a ratio of brain cancer eight times higher than expected.

These occupational studies are important because they 1) illustrate the health effects of plutonium and 2) researchers whose data pointed to similar conclusions at the Hanford site were defunded and discredited.

One independent scientist who experienced the scorn of the DOE is Dr. Carl Johnson who has worked in Denver, Colorado, to bring to light the effects of the Rocky Flats plutonium plant. Johnson observes strict and careful research methods in his studies, but they have repeatedly come under attack by the DOE because the conclusions of those studies are direct in their assessment of the dangers to the public living near plutonium processing plants.

In a recent legal case the Dept. of Energy agreed to pay 9 million dollars to landowners in Denver with soil contaminated with plutonium from the Rocky Flats plant.

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page 4 Hanford Clearinghouse testimony

It now appears that the DOE would like to recover materials used by Dr. Johnson in his work on the case. Johnson is being asked to return all Atomic Energy Commission, Dow and DOE documents obtained by him through discovery proceedings and Freedom of Information Act requests for the past 10 years. Dr. Johnson feels that the DOE would like to "har any future lawsuits and begin to rewrite history".

This example does not inspire confidence in DOE monitoring of Hanford's PUREX facility.

In Spokane, where plutonium contamination of the soil from Hanford has become a growing concern; independent scientists are examining DOE's data.

This year's 1984 Environmental Monitoring report for the Hanford Reservation is being analyzed by Dr. Allen Bensen. He points out several flaws in figures relating to radiation contamination. Battelle's report; prepared for the DOE in one instance examines plutonium levels from deer that lived on the Hanford Reservation. Using animals killed in road accidents the report analyzes the deer livers for plutonium. Ignoring the fact that the major pathway for plutonium is lungs. Bensen feels that this results in a very limited evaluation since in their own report DOE shows the lungs to be a credible pathway for plutonium to enter the body.

The list of inadequate or misleading information is a long one. We must start now not only to regulate DOE emissions, but to make information available about past practices.

Residents of the Northwest will be among who pay the ultimate price in terms of deaths from cancer and other health problems and permanent environmental damage caused by radioactive contamination. Future generations may look back on the shaky justification for renewed plutonium production and wonder why it was that the environment where we and our neighbors live, work and play had to be sacrificed on the altar of "national security". In the long run, the rationale for producing more nuclear weapons must be challenged if a livable environment is to be preserved on this planet.

HR 2593 is a first step in a new direction, to eliminate DOE's self-policing responsibilities and place them in the hands of the Environmental Protection Agency. While I can applaud this move, it must be said that it will not be enough to assure the safety and health of Northwest citizens.

page 5 Hanford Clearinghouse testimony

This is why I join with others today in urging that the following steps be taken:

- o A comprehensive listing of all DOE releases of radionuclides at the Hanford Reservation from past operations should be made public.
- o An independent study should be done now on the levels of radiation in the Columbia River. There is every indication that the river is in massive jeopardy at this time.
- o Begin a thorough and independent study of soil contamination and the impact to farms.

Larry Shook of Spokane's Hanford Education Action League has said, "The public has a right to know that cannot be disputed. We face economic dislocation of an unprecedented scale; if it is possible to produce nuclear weapons safely it is incumbent upon the Dept. of Energy to prove it- and they cannot do that by regulating themselves. It is like asking the suspect of a crime to present the definitive evidence of whether he has committed a crime or not".

It is also hoped that in future hearings, the independent scientists who have been directly involved in radiation and human health studies will be provided a forum for their findings. In that light I recommend the following people for the upcoming hearing on HR 2593 in Washington, D.C.

William Lawless
Dr. Allen Bensen
Dr. Carl Johnson
Dr. Alice Stewart
Dr. Mancuso
Larry Shook

One last note, with regard to the health effects of radiation contamination from Hanford; in the Northwest, as in the rest of this country; a huge controversy is brewing.

As long as the public's understanding of the risks rests with the DOE it will continue to intensify, and you will hear from all of us if there is any indication that forthcoming studies are not truly independent.

I thank you for the opportunity to speak to you today. Joanne Oleksiak,
coordinator, Hanford Clearinghouse



Department of Energy
Washington, D.C. 20585

JUL 14 1983

Mr. Charles L. Elkins
Acting Assistant Administrator
for Air, Noise and Radiation
U.S. Environmental Protection Agency
Washington, D.C. 20460

Attention: Central Docket Section (A-130)
Docket No. A-79-11

Re: Department of Energy Comments on Proposed National
Emission Standards for Radionuclides, 40 CFR Part 61

Dear Mr. Elkins:

The U.S. Department of Energy (DOE) furnishes the following comments for inclusion in the official record of the Environmental Protection Agency's (EPA) rulemaking on proposed National Emission Standards for Radionuclides. If promulgated, the proposed standards for radionuclides, which were published in the Federal Register on April 6, 1983 for public comment (48 F.R. 15076), would be National Emission Standards for Hazardous Air Pollutants pursuant to section 112 of the Clean Air Act and incorporated in 40 CFR Part 61.

These DOE written comments supplement my testimony at the public hearing held in Washington, D.C. on April 28, 1983. A transcript of this testimony with minor corrections noted is enclosed for incorporation in the record as reflective of DOE's position.

In summary, it is DOE's view that the EPA proposed standards for radionuclide emissions from DOE facilities are arbitrary and capricious, an abuse of discretion and otherwise not in accordance with law. First, EPA based its proposed standards for radionuclide emissions from Government facilities under the jurisdiction of DOE on an analysis of the best available technology at those facilities rather than on an analysis of the level of control of radionuclide emissions at such facilities that would be required to provide an ample margin of safety to protect the public health as required by section 112 of the Clean Air Act. Since the proposed EPA standards for DOE facilities are not based upon the required statutory criteria, the standards are unauthorized as a matter of law. Second, even if technology-based standards were authorized

by section 112, the proposed standards are not cost-effective in contravention of Executive Order 12291.

Third, the proposed standards unjustly discriminate against DOE facilities. In this connection, there appears to be a marked lack of consistency with which EPA has approached the regulation of radionuclides. In our opinion, all involuntary exposure to radiation, no matter what the source, should be subject to comparable standards based on reasoned risk benefit analysis. These standards should be based on scientific information, such as the most recent findings of expert advisory bodies such as the International Commission on Radiation Protection and the National Council on Radiation Protection Measurements, and should be changed only if new information becomes available. Uniform standards, developed in this way and coupled with an active program to keep radiation exposures as low as reasonably achievable would protect the public with the required "ample margin of safety," yet would provide a stable, predictable regulatory climate in which the many benefits of nuclear science and technology could be enjoyed. Standards based on scientific evidence would inspire more public confidence than those in which the chief criteria are the ability to pay, or the inability to measure. EPA's proposed standards for radioactive emissions are inconsistent with other EPA regulations applied to radioactive emissions, are not based on new scientific information, and appear to be arbitrarily derived.

For all of these reasons the proposed standards are not in compliance with applicable law and should be withdrawn pending further study.

- I. The proposed EPA standards for DOE facilities are not predicated upon the statutory criteria for national emissions standards for hazardous air pollutants and therefore are unauthorized as a matter of law.

- (a) Section 112 of the Clean Air Act contemplates health-based and not technology-based standards for hazardous air pollutants.

Section 112(b)(1)(B) of the Clean Air Act requires the EPA Administrator to establish an emission standard for a hazardous air pollutant ". . . at the level which in his judgment provides an ample margin of safety to protect the public health from such hazardous air pollutant." This statutory criterion clearly contemplates health-based and not technology-based standards for hazardous air pollutants.

Prior to proposing standards under section 112, EPA by its own acknowledgement has the burden of establishing that existing standards are not already providing an "ample margin of safety". As noted by EPA in the Preamble: "In cases where other standards are providing comparable control for radionuclides, EPA believes it is appropriate not to propose redundant standards under the Act. There would be no benefits because the public health would already be protected with an ample margin of safety, but there could be unnecessary costs associated with implementing an additional standard." (48 F.R. 15079)

The phrase "ample margin of safety" in section 112 must be interpreted in relation to acceptable risks, based on a comparative risk approach.^{1/} In our complex society, "safe" is not commonly understood as being equivalent to "risk-free" but rather is interpreted as implying that there are no significant risks. See Industrial Union Department, AFL-CIO v. American Petroleum Institute, 448 U.S. 607 (1980). To protect the public health with an "ample margin of safety", therefore, EPA must first determine what level of risk is indeed considered to be a significant risk by societal norms and, therefore, unacceptable. To give meaning to the word "ample", this risk should then be reduced below the "significance" level to some reasonable level of insignificance. Extensive scientific literature exists on the issue of comparative risk. Of particular interest are the works of scientific advisory bodies such as the International Commission on Radiological Protection and the National Council on Radiation Protection and Measurements.

^{1/} There is no credible direct evidence that exposure to radionuclides at levels below approximately 1000 mrem per year to the whole body have any adverse effect on health. However, because it is impossible to definitively establish, using current scientific methods, that levels below 1000 mrem per year will have no adverse effect whatsoever on health, radionuclides are classified as non-threshold, linear response pollutants. Given the extreme conservatism of this classification, it would be wholly unreasonable, as acknowledged in the Preamble by EPA, to conclude that a zero emission level for radionuclides is required to provide an adequate margin of safety. Clearly, Congress could not have intended such an extreme result.

- (b) EPA has not demonstrated a rational health basis for proposing standards for radionuclide emissions from DOE facilities.

Rather than performing a comparative risk analysis as required for the establishment of standards under section 112, EPA developed the proposed standards for DOE facilities "by considering highest existing emissions from those major DOE facilities where best available technology is used and considering the level to which emissions would be reduced by applying additional controls to other facilities." This EPA rationale requires the use of best available technology for emissions without regard to health risks and is patently inconsistent with the express language of section 112, which mandates standards based on protection of the public health and not on the availability of technology.

If EPA had conducted a comparative risk analysis as required, EPA no doubt would have concluded that DOE standards for exposure to individuals and population groups already provide an ample margin of safety so that no further regulation of DOE facilities is required under section 112 of the Clean Air Act.

Indirect radionuclide emission standards for DOE facilities have been established by DOE pursuant to authority in the Atomic Energy Act of 1954, as amended. These DOE standards which are applicable to all DOE and DOE contractor operations are set forth in DOE Order 5480.1A (copy attached). Compliance is rigorously enforced by DOE management with oversight from the Assistant Secretary for Environmental Protection, Safety and Emergency Preparedness.

The current DOE standards of 500 mrem/year annual dose equivalent to the whole body, gonads, or bone marrow, and 1500 mrem/year to other organs, of the maximally exposed individual are based upon well established Federal Radiation Council Guidance. In addition, emissions within these standards, are to be kept as low as reasonably achievable (ALARA), i.e., every economically feasible control is to be used to reduce exposure. The 500 mrem/year annual dose equivalent to the whole body was recently endorsed in principle by the International Commission on Radiological Protection (see ICRP-26). Therefore, 500 mrem/year whole body dose equivalent continues to represent the best national and international scientific estimate of an acceptable risk.

As illustrated by the dose estimates cited by EPA in the Preamble to the proposed rule, all DOE facilities result in doses considerably less than the upper limit of 500 mrem/year to the whole body. Through rigorous application of the ALARA principle, the overwhelming majority of DOE facilities, by EPA's own calculations, have dose equivalent emissions less than one percent of the upper limit standard of 500 mrem/year. In fact, as noted in the Preamble, for 15 of the 28 DOE sites studied, doses to individuals are estimated by EPA to be less than 1 mrem/year or 0.2 percent of the 500 mrem/year upper limit, with the maximum lifetime risk to the most exposed individual estimated to be less than 10 in 1,000,000 and the impact on the population estimated to be less than 1 potential health effect per 100 years of operation. For the remaining 13 facilities, only two facilities have doses to individuals that are more than 2 percent of the current upper limit, with doses from these two facilities at less than 20 percent of the upper limit. For these facilities the maximum lifetime risk to the most exposed individual is estimated to be less than 2 in 10,000 with the total risk to populations surrounding the 13 sites estimated to be less than 1 potential health effect per 15 years of operation.

According to EPA calculations, releases from the combined DOE facilities with the highest population exposures result in a total off-site effective whole-body dose equivalent to residents within 50 miles of approximately 400 person-rem/year which is exceedingly small compared to the approximately 2 million person-rem/year received by this same population from background radiation.

An upper-bound estimate of the cancer risk from exposure to radionuclide emissions from these facilities is approximately 1 cancer death per twenty-five years; roughly one million cancer deaths would occur in this same population from other causes. This translates to an excess risk of one ten-thousandth of one percent of the average individual in the exposed population contracting cancer as a result of exposure to radionuclide emissions from DOE facilities. For comparison, one of the recently published Nuclear Regulatory Commission objectives for safety goals and designs of nuclear reactors is that the risk of cancer to off-site populations from accidents or normal operation should not exceed one-tenth of one percent of the risk from all other causes of cancer. It is clear that based on the current standards, well-established principles of acceptable risks and EPA's own calculations, radionuclide emissions from DOE facilities in fact already provide an "ample margin of safety." By EPA's own reasoning, as set forth in the Preamble, if existing standards already provide an "ample margin of safety," any additional regulation pursuant to section 112 would not be authorized.

By incorrectly proposing technology-based, rather than health-based standards, EPA effectively punishes DOE for having vigorously applied the ALARA principle to assure that emissions at its facilities are far below the level of what has been recognized by the scientific community as an acceptable risk. It should be emphasized, however, that DOE has every intention of continuing to apply the ALARA principle to assure that exposures to the public from its facilities are as low as practicable. In this regard, EPA calculations of dose to the public from several DOE facilities were higher than DOE calculations. DOE is examining the correctness of these calculations together with the need for further reduction of emissions under the ALARA concept. The facilities being reviewed include the Los Alamos Meson Facility, Los Alamos, New Mexico; the Y-12 Plant; Oak Ridge, Tennessee, and the Feed Materials Plant, Fernald, Ohio.

II. The proposed standards are clearly not cost-effective in contravention of the requirements of Executive Order 12291.

As previously discussed, only standards needed to provide an ample margin of safety to the public health are authorized by section 112 of the Clean Air Act. Since EPA's proposed standards for radionuclide emissions from DOE facilities are not so authorized, any expenditures required to comply with the proposed standards would be a foolish expenditure of taxpayer dollars. The costs of DOE compliance are estimated by EPA to be approximately \$25 million. Therefore, by EPA's own estimates a cost of \$25 million would result in the dubious benefit of reducing the already miniscule risk of one ten-thousandth of one percent excess risk of cancer from radionuclide emissions from DOE facilities. Such cost ineffective regulation directly contravenes the requirements of Executive Order 12291.

Indeed, while it is impossible to predict with any accuracy the precise costs of compliance with the EPA proposed emission standards for DOE facilities, DOE believes that the EPA figure of \$25 million grossly underestimates the likely costs. Examples of direct costs to DOE that have not been considered by EPA are:

- The costs of complying with the proposed standards if increased production activities are required;
- The costs of a shutdown of operations if it is not possible to comply with the proposed standards at certain facilities; and
- The costs of assuring compliance with the proposed standards without exception for an unusual occurrence or an accidental release.

Perhaps even more important, however, are the indirect costs to government and society resulting from perceptions, however unjustified, that exposures to radionuclides above the arbitrarily low EPA proposed standards are harmful to health. This perception is inevitable even though, in fact, the proposed standards have little if any correlation to public health risks. Currently, there are numerous lawsuits pending against the Government and its contractors alleging billions of dollars of damages from exposure to low levels of radiation. Establishing exposure at a level above the EPA standards likely will be found to be sufficient for a prima facie showing of causation in these cases and also may be held to establish a rebuttable presumption. It is almost certain that if the proposed EPA standards for DOE facilities are finalized, the number of lawsuits will increase dramatically and, regardless of eventual outcome, the Government's litigation costs will substantially increase.

In addition to increased litigation costs, the proposed standards could result indirectly in a substantial lowering of allowable occupational exposures with enormous cost implications. Additional costs will be incurred if, as is foreseeable, the EPA is forced to bring standards in 40 CFR Part 190 for commercial nuclear power plants and proposed 40 CFR Part 191 for waste management operations into conformance with the much lower standards for DOE facilities. In addition, states and localities predictably will impose emission standards on DOE facilities that are more restrictive than EPA's with resulting additional costs to the taxpayer. All of the above noted direct and indirect costs of the EPA proposed standards should be carefully studied and considered. When these are considered the cost-ineffectiveness of the proposed standards becomes even more blatantly apparent.

III. The EPA proposed standards are unjustly discriminatory.

In addition to being unauthorized and cost-ineffective, EPA's proposed rulemaking for radionuclides is unjustly discriminatory. EPA is proposing indirect dose equivalent emission standards for DOE facilities of 10 mrem/year whole body and 30 mrem/year to any organ of any individual living nearby. These proposed standards are considerably more stringent than EPA standards for other radiation releasing activities, which standards, EPA determined in the Preamble to the proposed rule, already provide an ample margin of safety so that no further regulation is required under section 112. For example, EPA's standards for uranium fuel cycle facilities (40 CFR Part 190) permit emissions equivalent to whole body doses to individuals of 25 mrem/year and 75 mrem/year to the thyroid. These same dose equivalents of 25 mrem/year whole body and 75 mrem/year to the thyroid are

currently being proposed by EPA for radiation exposure to members of the public from DOE's management of high level radioactive waste, spent fuel and transuranic waste. (47 Fed. Reg. 58196; 40 CFR Part 191). In addition, the recently promulgated EPA standards for inactive mill tailings sites (40 CFR 192), although expressed in terms of curies released, permit dose equivalents of approximately 170 mrem/year whole body and 500 mrem/year to the lung.

EPA provides no health related rationale for its discriminatory treatment of DOE facilities. EPA's only attempted justification is its belief that "those few DOE facilities tending to have emissions greater than the proposed limit, can, in EPA's judgment, reduce their emissions using available technology or work practices." This technology related justification is particularly disturbing since the lifetime risk to the most exposed individual from DOE facilities with the highest emissions is estimated by EPA to be less than 2 in 10,000, whereas the EPA estimated lifetime risk from the uranium fuel cycle facilities, which EPA does not propose to regulate under Section 112, is estimated to be 1 in 2000. If a lifetime risk of 1 in 2000 provides an "ample margin of safety", it is unfairly arbitrary and discriminatory to conclude that a lifetime risk of 2 in 10,000 does not provide an "ample margin of safety" and must be reduced to an arbitrary level of 2 in 50,000.

The arbitrariness and discrimination inherent in the proposed rulemaking is further illustrated by the rationale used by EPA to exclude other types of radionuclide emitters, such as coal-fired plants, from regulation. For these emitters EPA correctly determined that standards under section 112 would be redundant or, if more restrictive, then unreasonably expensive. DOE contends that the same conclusion is inescapable for its own facilities as well.

Further, EPA's determination that the extremely low dose equivalent proposed standards are justified for DOE facilities appears to be inconsistent with previous EPA findings for other emitters. Notably in the environmental impact statement for the 40 CFR Part 190 standards (EPA 76), EPA found that the improvement in health benefits of reducing the dose limit to the whole body from 25 mrem to 15 mrem, and then to 5 mrem, would be "not significant" and "small" respectively. EPA recently reaffirmed this finding in its draft environmental impact statement (EIS) for 40 CFR Part 191 (EPA 520) and further found that implementation of limits lower than 25 mrem to the whole body would be difficult since "confirmation of doses by direct measurement of environmental concentrations of nuclides would be at or beyond the state of the art for environmental monitoring". (Draft EIS for 40 CFR Part 191, EPA 520, December 1982; page 147)

IV. Other Operational Concerns

Up to this point DOE's major general concerns with the proposed standard have been articulated. In addition, DOE has other serious concerns with specific portions of EPA's proposal as follows:

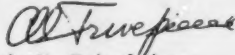
- The mathematical codes that are required for calculation of the dose-equivalent value to members of the public are controversial, and not generally accepted by the scientific community.
- Reporting requirements are excessive.
- The requirement that prior permits be obtained before any modification of the source is totally impractical for the experimentally flexible, distributed-service nature of the DOE facilities.
- Remedial action sites, accidental releases, and releases to be regulated under 40 CFR Part 191 should be exempt.

V. Conclusion.

In view of the foregoing the conclusion is inescapable that the proposed standards for radionuclide emissions from DOE facilities are arbitrary and capricious, an abuse of discretion and otherwise not in accordance with law. See Citizens to Preserve Overton Park v. Volpe, 401 U.S. 402 (1971). Izaak Walton League v. Marsh, 655 F.2d 346, cert den. sub nom., Atchison, T. & S. F.R. Co. v. Marsh, 454 U.S. 1092 (1981). Environmental Defense Fund v. Costle, 657 F.2d 275 (D.C.Cir. 1981).

Hopefully these comments will convince EPA that the proposed standard--at least as it relates to DOE facilities--is not in the best interests of the public and should be revised to reflect our concerns.

Sincerely,



Alvin W. Trivelpiece
Director of Energy Research

Mr. MARKEY. The next witness is Dr. Ruth Weiner, from the Sierra Club of the State of Washington, and she is the Conservation Chair.

Dr. Weiner, thank you for coming.

STATEMENT OF RUTH F. WEINER

Ms. WEINER. Thank you, Mr. Chairman.

Thank you, Mr. Chairman and thank you for having the hearing in the northwest, which gives us an opportunity to testify.

We are in strong support of H.R. 2593, which would serve a badly needed function and would make Federal defense facilities obey the same kind of pollution control laws that everyone else has to obey.

I would like to see the bill more comprehensive and include other pollutants, other than radioactive materials. We've wanted this for a long time.

It is also appropriate that EPA should be the monitoring agency because that is their mission. As the bill is written, it does raise some questions about enforcement procedures. Under the Clean Air and Water Act, enforcement is done by the States, but there may be a problem with access of many people to Defense facilities.

If EPA is, itself, charged with the monitoring, please don't have a contractor do it. Please have regular EPA employees do it. We have too much contractor work done by Government agencies, now.

I'd like to mention three incidents, two in addition to the one mentioned by Mr. Buchanan, which point up the need for this bill.

The first was the Rocky Flats fire in Denver in 1970. I lived in Denver at the time, and we could see the fire. And the next day, the AEC told us, nothing to worry about, nothing at all. Subsequently, Edward Martell of the University of Colorado found plutonium in the environs within a 30-mile radius of the plant, including within the city limits of Denver, and there has been a report of excessive cancers which must be looked at seriously.

If you locate a defense facility that can emit plutonium within 30 miles of a population of 1½ million people, you've got to have an independent monitoring network to take care of it and oversee it.

The second example is the Navy's EIS on the Bangor submarine base, the Trident Base. The Navy issued only total amounts of radioactive materials that it would emit, amounts that it would promise to stay below, and they are fairly sizable. There was no accurate data given—no accurate monitoring network that we know of set up—whose results are accessible to the public.

There's a large shellfish fishery in Hood Canal, and a fair number of people live there. Again, these people are subjected to a public health threat.

Finally, of course, the release at PUREX has been mentioned, and since DOE is now the agency of jurisdiction, I have to compliment Mr. Lawrence. You did a much better job than the AEC would have done. But one still can't really get raw data out of DOE, and it takes a lot to get it. Their claim was, at the press conference, that the release was not plutonium; it was thorium and thorium daughters. But it has been impossible, at least for me, to get the raw data showing the radioactive decay that would in fact show this.

They only give you copies of viewgraphs and I've appended these to my testimony. Issuing the raw data and issuing it immediately would have done a great deal to bolster public confidence in the Agency, and with EPA, we've never had any problem getting this kind of data out of region 10.

We need to get data in terms of maximum emissions over short periods of time. What DOE gives you now are averages, or maxima over long periods of time, like a year. That's not good enough. Radiation damage depends on immediate dose, as well as on cumulative dose. It's no good averaging days when the plant was shut down with days when they had excessive releases. That doesn't tell you a thing about public health.

There are other radionuclides routinely emitted from PUREX, in addition to plutonium. And some of these releases are quite large and some of them can only be controlled by cutting back on plant operations.

Again, it is absolutely vital that we have an adequate, independent monitoring system.

Finally, I'm not sure why DOE opposes this bill. If they have nothing to hide, they ought to welcome an independent monitoring agency. It seems to me it would be in DOE's best interests to support this bill. If the public wants the money spent this way, what does DOE care that it wants that? And the public apparently wants the money spent this way.

Self-regulation, as the chairman has pointed out in his opening statement, never works. It hasn't worked with industry; it doesn't work with Government agencies. The monitoring agency should be an agency whose mission is to protect public health—not an agency whose mission is weapons manufacture.

Thank you very much.

[The prepared statement of Dr. Weiner follows:]



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TESTIMONY ON HR 2593
THE MILITARY RADIOACTIVE EMISSIONS CONTROL ACT OF 1985

Ruth F. Weiner, Ph. D.
Cascade Chapter, Sierra Club
Portland, Oregon, August 14, 1985

I would first like to thank the Subcommittee for soliciting the Cascade Chapter's views, and asking me to testify here, and for holding this hearing in the Pacific Northwest. HR 2593 would serve an important and badly needed function: it would compel Federal defense facilities to obey the same laws that govern the rest of the United States. Why these facilities have not been obliged to comply with pollution control laws up to now is a bit mystifying.

Unfortunately, HR 2593 is not sufficiently comprehensive, since it covers only radioactive emissions. The provisions of HR 2593 should cover all emissions from defense facilities into the air and water. In other words, the facilities addressed in this legislation should be under the jurisdiction of the Environmental Protection Agency (EPA) for compliance with the Clean Air Act, the Clean Water Act and the Resource Conservation and Recovery Act. Extending EPA's jurisdiction for radioactive emissions is a good beginning, but ultimately all effluent control from these facilities should be assured in the same way.

As the bill is written, it also raises some questions about enforcement procedures. Under the Clean Air and Clean Water Acts, most enforcement is delegated by EPA to the states, and EPA does not enforce directly. The State of Washington recently included radioactive emissions in the State Clean Air Act, and will be setting state standards accordingly. Although it is understandable that access to defense facilities ought to be limited, delegation of enforcement to the states is consistent with current policy, and would be the wiser course to take here if possible. If, however, it is deemed that state enforcement gives too many people and agencies access to defense facilities and that EPA itself should be the direct enforcer, EPA must be given resources adequate to do the job. In addition, there should be some assurance that monitoring and enforcement will not be done by a contractor, but by regular EPA employees. There is no need to proliferate the mediocrity of the technical services rendered under most contracts.

The history of "unscheduled emissions" and emissions inventories of defense facilities highlights the need for this bill. I would like to discuss three incidents where a bill like this,

HR 2593

Page Two

ensuring independent monitoring, would have made an enormous difference in public confidence and perhaps in public health itself. These three incidents are: the Rocky Flats fire in 1970, the Navy's environmental impact assessment of the Trident submarine base at Bangor, and the release from the PUREX plant in January, 1984.

The fire at the Rocky Flats plutonium machining facility occurred in 1970, when the Atomic Energy Commission (AEC) still had jurisdiction over all aspects of nuclear materials and development. I was a resident of Denver at the time, and we could actually see the fire. In the newspaper reports the next day, the AEC essentially told the public not to worry about a thing, there had been no releases of radioactive material, and everything was OK. No data about losses, damage, or monitoring results were ever made public by the AEC or by Dow, the contractor. Two years later, the AEC, in testimony before the Joint Committee on Atomic Energy, identified the Rocky Flats fire as the worst disaster to date in the nuclear industry.

Edward Martell, then at the University of Colorado, independently assayed the environment surrounding Rocky Flats for plutonium, and found measurable amounts of plutonium in the soil within a thirty-mile radius of the plant, including areas within the city limits of Denver. His work is published in the open scientific literature. There is also a claim, which must be taken seriously though it is as yet poorly documented, that there have been excessive incidences of cancer within the area where plutonium from the fire was found.

The primary issue in this instance is clear: the public, particularly the residents of nearby communities, were exposed to a clear and undeniable threat to public health. They had a right to full and immediate disclosure of the nature and the amount of the emissions. A facility handling plutonium which is located within thirty miles of a metropolitan area of a million and a half residents ought to have established a thorough continuous monitoring network for radioactive emissions, with the monitoring done by an independent agency and the monitoring results available to the public at any time.

The argument that such data cannot be public because it would reveal the size of the plutonium stockpile simply does not hold. When Rocky Flats is operating properly, no detectable plutonium at all should be emitted - it's too valuable to send up the stack anyway. Filters to achieve this might not have been available in 1970 (though there were good filtration systems) but

HR 2593
Page Three

they are available today. Moreover, the quantities emitted during excursions bear no consistent relationship to the amount of plutonium produced. An excursion is an accident, after all. Had the fire not been visible for miles around, one wonders what, if anything, the AEC would ever have said about it.

Protection of public health demands independent stack monitoring and environmental monitoring for plants like Rocky Flats and Pantex, which is not far from Amarillo. Such monitoring is just not possible or credible from the agency which oversees these plants, the Department of Energy (DOE). EPA is the logical agency to do this.

The second example I would like to discuss involves the environmental assessment done by the Navy for the Trident submarine base at Bangor, Washington. In the Environmental Impact Statement (EIS), the Navy admits to radioactive emissions into Hood Canal, Puget Sound and the surrounding air. Indeed, the Navy could hardly deny that such emissions occur.

However, the Navy was not required to be specific about either the nature or the amounts of these emissions. For example, the EIS states that less than one Curie of tritium per year will be emitted into Hood Canal. Now, a Curie of tritium is quite a lot of tritium, and one can reasonably ask how much less will be emitted, what will the emission rate be (one Curie in a day would be a huge amount), how will this be monitored, what would characterize an excursion, what precautions should be taken in the event of an excursion, and so on. A lot of people live near Bangor, and there is a large shellfish resource in Hood Canal, as well as a considerable fishery. Again, the public must know the nature, amounts and rates of radioactive emissions into this waterway, and must be given this information by a trustworthy independent source.

My final example is the release from the plutonium-uranium extraction (PUREX) plant at Hanford in January, 1984. Since DOE is now the agency of jurisdiction, rather than the AEC, a press conference and briefing were held on the release and the agency attempted to explain it. One problem in this instance is that this particular agency's credibility is so low that its pronouncements are greeted with considerable skepticism.

In its briefing packet, DOE admits to upset conditions: some stack monitors were not working, and the release was at first thought to be plutonium. According to DOE, subsequent analysis

HR 2593
Page Four

of the radioactive decay of the emitted material showed it to consist of thorium and thorium daughters ("thoron") which had contaminated the stack lining, rather than plutonium. There is no way to tell by looking at the record of monitored alpha emissions only (which, incidentally, was released by DOE); one must either subject the monitoring samples to alpha spectroscopy or measure decay rates (half-lives), which DOE did.

The trouble is that DOE won't release the actual record of the actual decay rate data - all one can get out of the agency are viewgraphs made from the data. Moreover, the data on radioactive releases presented by DOE at the press conference following the release are all given as average releases or total releases of certain radionuclides. I have appended copies of the pertinent tables and viewgraphs to my testimony.

Ambient standards for other air pollutants are usually framed in terms of a maximum allowed concentration or emission. Since damage done by a radiation dose depends on the size of the dose (the maximum or peak dose) as well as on the long-term total doses received, standards must be set, and met, for maximum allowed releases of various radionuclides from PUREX as well as from similar facilities. Small quantities of plutonium are routinely released from PUREX; DOE gives only average and approximate total values for these releases. For the routine releases, as well as for the January, 1984 excursion, the public at risk is entitled to know what the maximum release was, over what period of time it took place, and whether, in the opinion of independent observers analyzing the raw data, the release was plutonium or thoron.

Other radionuclides are routinely released from PUREX, including an extremely large annual release of Krypton-85 (approximately 370,000 Curies/year). The nature of the PUREX process and the nature of Kr-85 - it is chemically inert and thus cannot be trapped or dissolved in anything - make releases of this order of magnitude inevitable. The only way to reduce them is to reduce plant production. If we must have facilities like PUREX, which will be with us as long as we are part of the nuclear arms race, they should be located far from any permanent population, in order to reduce the risk from emitted radioactive materials. This risk reduction, in particular, must be confirmed by an independent monitoring system, including a stack monitoring system.

Moreover, there must be an adequate monitoring network maintained in population centers which are at any risk of radioactive

HR 2593
Page Five

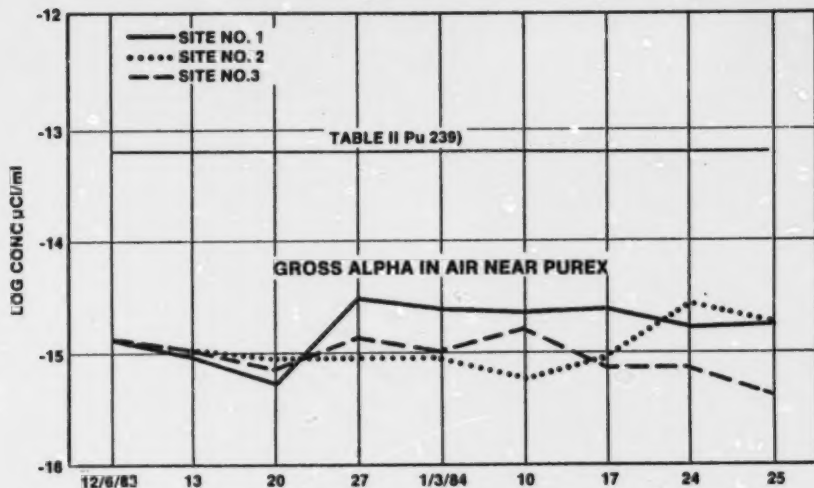
fallout from defense facilities. At present, DOE monitors fallout from PUREX within a 50-mile radius, to Moses Lake, WA. After the 1984 excursion, a number of us suggested that, if there had indeed been no radioactive fallout as far away as Spokane (a bit more than 100 miles), the fears and suspicions of Spokane residents could be allayed by extending the monitoring network there. After all, a few more monitoring stations are hardly going to make a difference to DOE. For reasons which remain unclear, DOE is unwilling to extend its monitoring network to Spokane. EPA would, I am sure, respond to requests for such an extension and would be more ready to make raw data available to independent inspection.

An additional argument for HR 2593 is that EPA standard-setting procedures already involve independent advisory committees made up of industry representatives, control officers, and independent experts and interested parties (I served on one of these from 1972 through 1975). EPA also utilizes an independent Science Advisory Board. The agency's jurisdiction thus involves the sort of independent technical oversight which is so badly needed for defense facilities.

In the forty years since the explosion of the first atomic bomb, we have learned much about the threat to public health posed by radioactive materials in the environment - much that was not even suspected forty years ago. Emissions from defense facilities therefore must be under the jurisdiction of an agency whose mission is pollution control, not an agency whose mission is weapons material manufacture. We thus support HR 2593 and would like to see it strengthened to include all pollutants, not just radioactive materials.

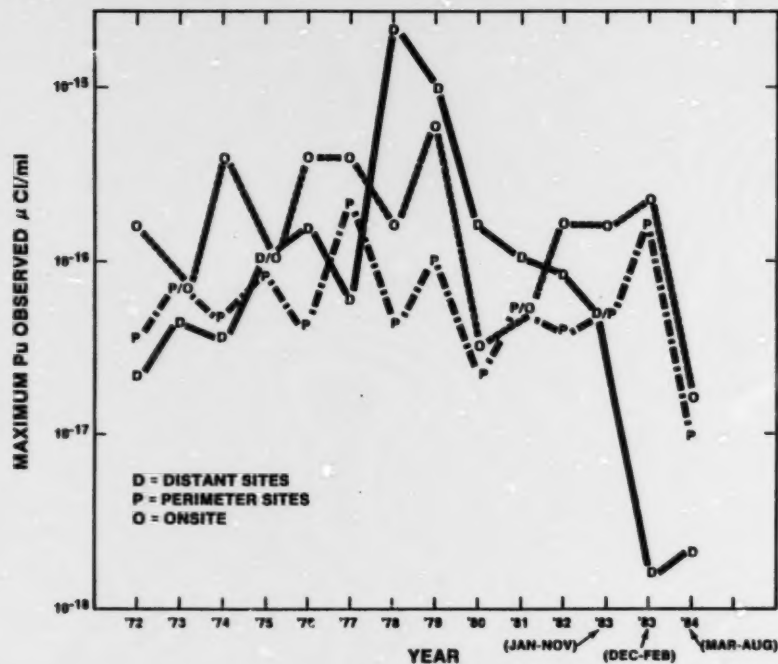
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ROCKWELL 200 AREA AIRBORNE PARTICULATE SAMPLE RESULTS



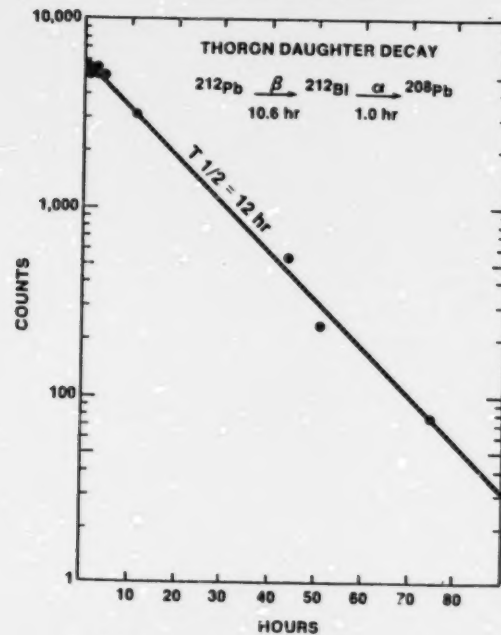
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PNL ON AND OFFSITE ENVIRONMENTAL SAMPLING



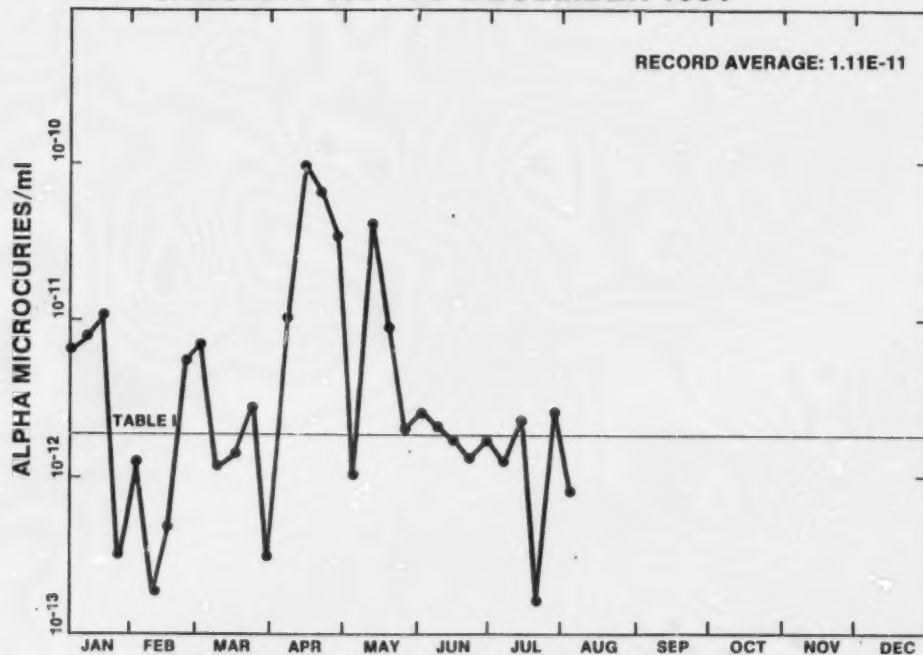
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PUREX STACK SAMPLE 1/25/84 DECAY CURVE



BEST COPY AVAILABLE

RADIOACTIVE AIR PARTICULATE ANALYSES JANUARY 1984 TO DECEMBER 1984



AIRBORNE RADIOLOGICAL RELEASES

RADIOISOTOPE	ACTUAL RELEASES THROUGH JULY 1, 1984		PROJECTED RELEASES POINT OF DISCHARGE		EIS PROJECTION POINT OF DISCHARGE		FRACTION OF PERMISSIBLE SITE BOUNDARY
	AVERAGE (rCi/ml)	TOTAL (CURIES)	ANNUAL AVERAGE (rCi/ml)	TOTAL (CURIES)	ANNUAL AVERAGE (rCi/ml)	TOTAL (CURIES)	
TOTAL α (AS Pu 239)	.007	.011	.004	.013	.003	.009	.0001
TOTAL β (AS Sr 90)	.23	.40	.23	.80	.35	1.2	.00001
I 129	.03	.05	.03	.10	.15	.51	.000002
I 131	BDL*	BDL	<.0001	<.0001	.09	.30	<.000000002
Kr 85	120,000	185,000	120,000	370,000	970,000	3,300,000	.0007
H 3	70	170	70	340	880	3,900	.0000008
C 14	1.6	3.2	1.6	6.4	2.6	9.0	.00000003

* BELOW DETECTION LIMIT

Mr. MARKEY. Thank you, Dr. Weiner, very much.

The next witness is Dr. Charles Schade, M.D., who is a health officer for Multnomah County in the State of Oregon.

Mr. WYDEN. I want all the witnesses to know, that when we get the chairman back to Washington in the fall, he'll learn how to pronounce Multnomah County.

Mr. MARKEY. I'll also know not to say Oregon. It's Oregen. I'm learning, I'm learning.

So, Dr. Schade, would you like to begin your testimony?

STATEMENT OF CHARLES P. SCHADE

Mr. SCHADE. Thank you, Mr. Chairman.

Thank you, Mr. Chairman. Ladies and gentlemen, I am Charles Schade, Multnomah County health officer. I'm speaking today on behalf of myself as health officer and the department of human services.

Some of the things I say will reflect the policy of the board of county commissioners, but the board has taken no position on this specific piece of legislation. In 1983, the board did adopt a resolution regarding the PUREX facility, and in 1985, one regarding high-level waste, both of which did reference independent monitoring of radioactive emissions. But, as I mentioned, the board has taken no specific position on this matter.

History has a number of repeated allegations of various problems of emissions from DOE facilities, many of which you've heard about already. I'm not going to repeat them at this point, as they are already on the record. I would like to note, however, that the public is concerned and the public is concerned even as far away as Portland Multnomah County Oregon.

The arguments of the Department of Energy are in that regard the same as any industry facing regulation. The arguments are the same that we heard from the ambulance companies when we regulated the ambulance industry here in Portland. They relate to technical abilities of the industry, which I think are indisputable. What is disputable, in the light of past performance, is the public's perception and the public here is concerned. I do get telephone calls expressing concern about this issue.

What others have mentioned, and I'd like to amplify, is the issue of conflict of interest. And conflict of interest from a regulatory standpoint. The same or related agency monitoring effects as producing the product, is, as others have noted, a question of really the fox monitoring the hen house.

In this case, the producer does not have public health as its primary responsibility, although we've heard, and I've no reason to dispute, that the Department of Energy is indeed seriously concerned about public health. I've been involved with the Department of Energy activities at the local level that would suggest that concern is there.

However, the public does not uniformly believe these official pronouncements. Let me give you an example of a conflict of interest in the Department of Energy's work. If you'd see the draft environmental impact statement on the Hanford Waste Repository, and look at table 6.3, there are seven studies of diffusion of plutonium

into the ground water. All of them are done by industrial or governmental industrial interests. Not one by a health-related agency.

I don't dispute the expertise of these organizations. But there is a credibility question. The question is really a Caesar's wife issue. Not only must there be no wrong doing, there must also be the absence of appearance of wrong doing. The appropriate resolution of the regulatory problem, who should regulate Department of Energy emissions, I think, is quite simple.

I think it should be an independent health-related agency. EPA is a good logical choice if there are public health studies to be done, if there are concerns about possible increased incidents of disease, I would suggest the Federal Centers for Disease Control is also an appropriate agency to involve. Both have good track records with the local health agencies, and both are highly credible.

The EPA, in addition, has State and local counterpart agencies which have a very good record for cooperation. Their scientific work is highly credible, and more importantly, it's open and accessible. As others have noted, you can get information out of EPA. You can easily challenge and influence its regulatory processes.

That, I think, is what the public is concerned about here, more than the question of has somebody done something wrong, or is somebody doing something wrong. The question is, can we be sure that we're adequately protected.

I know that the industry and the Department is very concerned about outside regulation, but as a regulator, I have a fair amount of experience, it probably would be better for the Department of Energy. And I think that as others have noted, it would really be a good idea and in the Department's best interest to cooperate with this kind of regulation. Because it will serve to allay the public concerns and protect the public, itself.

Thank you very much.

Mr. MARKEY. Thank you.

Our next witness is Nancy Ellison, who is the division supervisor for Air Quality, the Washington State Department of Ecology, in Olympia, WA.

Welcome, Ms. Ellison.

STATEMENT OF NANCY ELLISON

Ms. ELLISON. Thank you Chairman Markey, ladies and gentlemen. We appreciate the opportunity to be here this morning to comment on H.R. 2593.

The Washington State Department of Ecology does support the intent and purpose of this bill, The Military Radioactive Emissions Control Act of 1985. The Department believes that defense facilities are subject to the same environmental laws that other facilities are, and should be required to provide the same safeguards.

Obviously, our State has a strong interest in the subject matter of this bill, because of the presence, within our borders, of the Hanford Nuclear Reservation and several other defense installations in the State, as well.

Public sensitivity about atomic energy defense facilities has grown in recent years in Washington State, particularly since the restart of the plutonium extraction and reprocessing facility,

Purex, on the Hanford Reservation in 1983. Both our State legislature, and various citizen groups have expressed concern about the adequacy and timeliness of information made available to the State and to the general public about emissions and releases from Hanford-related activities.

We believe this bill would help address some of those concerns by clarifying the role of the U.S. Environmental Protection Agency in setting emission and effluent standards, and monitoring compliance, rather than leaving those roles to agencies directly involved in atomic energy defense facilities. The bill gives the public more assurance that environmental and public health considerations will be fully addressed.

We also believe the bill's requirement for onsite, as well as off-site, monitoring and testing will help provide necessary information to address public concerns. And we support the requirement for the EPA Administrator to issue an annual summary, summarizing the data, analyzing the extent of compliance by defense facilities, and making recommendations for legislative or other corrective action when necessary.

We have a few specific suggestions for changes or clarification. First, if any of the responsibilities under this bill are contemplated to be delegated to the States, we would appreciate if that could be spelled out. The States do generally carry out these activities, at least in the air pollution control area, for other, for nondefense facilities.

We don't disagree with Mr. Lawrence, when he made the comment that the way EPA requires monitoring now, particularly, continuous monitoring, it often is done by the operator or paid for by the operator. The difference, however, is that the independent regulatory agency sets the criteria to be monitored, the standards, the frequency, the procedures, the methodology, receives the data, and not just summaries or averages, but the raw data, when necessary, and audits it and is directly involved. And, in this case, EPA could develop a quality control and assurance plan in monitoring and QCQA guidelines.

We think section 3(c)(2) should be modified to specifically include or mention the inclusion of ambient air and ground water monitoring, not just surface water.

And we'd like to see, in the area of enforcement, some sort of penalty provision by which perhaps the EPA Administrator could require that operations be stopped, or at least curtailed, if continued operations would mean exceeding an environmental standard. Obviously, it's unrealistic to contemplate levying a monetary penalty, but perhaps a production penalty could accomplish the same goal.

Or, if in regard to a storage facility, perhaps it could be required that no new material enter the facility until the standard were achieved.

That summarizes our comments. Again, thank you for inviting us and we do support the bill.

[The prepared statement of Ms. Ellison follows:]

August 14, 1985

COMMENTS

NANCY ELLISON, DIVISION SUPERVISOR
WASHINGTON DEPARTMENT OF ECOLOGY

H.R. 2593

The Washington State Department of Ecology supports the intent and purpose of H.R. 2593, the "Military Radioactive Emission Control Act of 1985." The department believes that defense facilities are subject to the same environmental laws that other facilities are and should be required to provide the same safeguards.

Washington State has a strong interest in the subject matter of this bill because of the presence within our borders of the Hanford Nuclear Reservation. There are also several other defense installations within the state.

Public sensitivity about atomic energy defense facilities has grown in recent years in Washington, particularly since the restart of the plutonium reprocessing facility (PUREX) on the Hanford Reservation in 1983. Both our state legislature and various citizen groups have expressed concern about the adequacy and timeliness of information made available to the state and the general public about emissions and releases from Hanford activities.

We believe this bill would help address some of those concerns. By clarifying the role of the U.S. Environmental Protection Agency (EPA) in setting emission and effluent standards and monitoring compliance, rather

than leaving those roles to the agencies directly involved in atomic energy defense facilities, the bill gives the public more assurance that environmental and public health considerations will be fully addressed.

We also believe the bill's requirement for on-site as well as off-site monitoring and testing will help provide necessary information to address public concern. And we support the requirement for the Administrator to issue an annual summary analyzing the extent of compliance by atomic energy defense facilities, and making recommendations for legislative or other corrective action when necessary.

We have a few specific comments/suggestions for changes or clarification:

1. Delegation

To be meaningful, responsibilities of the EPA Administrator should be delegated to the states. The states generally carry out these activities for other non-defense facilities. A section should be added to specifically permit this. It should also allow for reimbursement to the states for expenses incurred in carrying out provisions of the act.

2. Continuous Monitoring

Section 3(a) requires the EPA Administrator to conduct continuous or periodic monitoring. Because continuous monitoring can be very labor-intensive and can require frequent checks by staff, it may be impractical for EPA or a state to conduct much continuous monitoring. This section should be revised to allow the Administrator to require that the Department of Energy conduct the continuous monitoring, with review by the EPA Administrator. It could be handled in much the same way that sources subject to New Source Performance Standards must monitor or the way the states conduct some ambient monitoring. In both of these approaches the regulatory agency sets the standards and procedures to be followed and prescribes the frequency. The regulated facility does the monitoring; data is transmitted to and audited by the regulatory agency. In this case, EPA could establish monitoring and quality assurance guidelines.

3. Ambient Air and Groundwater

Section 3(c)(2) should be modified to specifically include the monitoring of ambient air and groundwater, not just surface water.

4. Enforcement

There should be some provision to allow the EPA Administrator to require that plant operation be curtailed or stopped if continued operation would mean exceeding an environmental standard. Because it is unrealistic to levy a monetary penalty, a production penalty could accomplish the same goal. With respect to storage facilities, it could be required that no new material enter the facility until the standard were achieved.

Mr. MARKEY. Thank you very much.

Our final witness is Mr. Steve Boedigheimer, who is the Chief of the Environment and Health Systems Section of the Oregon Health Division, in Portland, OR.

Welcome and please begin your testimony.

STATEMENT OF STEVE BOEDIGHEIMER

Mr. BOEDIGHEIMER. Thank you, Mr. Chairman. And thank you for inviting me here, and thank you, Congressman Wyden, for having the interest that is, I think, necessary in this area.

My remarks relate largely to history, sharing with you, Oregon's interest in accurate and credible monitoring.

Defense-related research and development and waste disposal activities of the Hanford operations have, in the past, contributed significant amounts of radioactivity into the Columbia River. The Atomic Energy Commission supported surveillance projects assessing the radioactivity in the Columbia River, as well as along the Oregon and Washington Coasts.

In 1962, The Division of Radiological Health of the U.S. Public Health Service signed a contract with the Oregon State Board of Health—now the Oregon State Health Division. This contract called for starting a radiation surveillance program along the Columbia River from the McNary Dam to Astoria and extending southward along the Oregon Coast. The funding enabled the State of Oregon to set up a laboratory facility, purchase necessary radiation counting equipment, and obtained required personnel to do the sampling and analyses.

The U.S. Public Health Service continued funding of this program through 1967. After that, Oregonians saw the need for continuing the program because several of Hanford's production reactors were still operating and contributing radioactivity into the Columbia River. The Oregon legislature authorized funding to continue a monitoring program on a limited scale. The total scope of the program remained basically the same, but with limited funding, several areas of the program were readjusted and altered, primarily in sample frequency.

Currently, the health division's surveillance program on the Columbia River continues, with sampling occurring on a quarterly basis for most locations. The frequency along the Oregon Coast has been extended to annually for some locations and every 4 years for others. The locations nearest the mouth of the Columbia River are sampled most frequently to let us know what's happening along the coastline.

Phasing out Hanford's production reactors between 1965 and 1972 had a significant impact on reducing the radioactivity levels in the Columbia River. Attached to this testimony are graphs of the levels of radioactivity measured in average gross beta activity at two locations which show the decline from the early 1960's through 1983. From approximately 1974 to the present, the level of radioactivity in the Columbia has been essentially the same as for other surface waters throughout Oregon.

The health division in Oregon has maintained an aggressive statewide environmental radiation surveillance program, which

looks at all potential contributors of radioactivity into the environment. This includes Oregon's radioactive material licensees, the Trojan nuclear power facility, as well as statewide surveillance due to atmospheric fallout from weapons testing.

The health division is also a participant in the Hanford Repository Review Committee, appointed by the Governor, to look at potential impact on Oregon, of a high level waste repository at the Hanford Reservation. Oregon's Department of Energy is the lead agency for this particular project in oversight in Oregon.

Looking toward the future, the Columbia River Program initially was established to monitor only gamma emitting radionuclides, along with gross alpha and beta activity. It is recognized that the Hanford operation is involved in many projects, and Oregonians are interested in knowing the impact of such projects as the PUREX facility.

Along with these increased concerns about the long-lived alpha emitters in the Columbia, the health division is taking steps to develop a program to define the levels of specific alpha emitters, such as plutonium and uranium.

The first steps have been taken to establish a closer working relationship among the various agencies involved in monitoring the river for radioactivity. It is our goal to establish a regularly scheduled joint sampling program with the State of Washington and the Richland Operations Office of the Department of Energy. Details of this project have not been completely worked out, but a first joint sampling took place on July 30 of this year, and I believe the Greenpeace organization was participating with us in that effort. This joint effort is intended to promote information exchange and enhance credibility among agencies regarding monitoring. So this is recognized, certainly, as a problem.

Oregon has the expertise and equipment necessary to do environmental radiation monitoring. And if this bill becomes law, agencies other than the U.S. Department of Energy, are sought to do such monitoring, Oregon would stand available for that. Precedent has been established for Oregon to enter into contracts with Federal agencies.

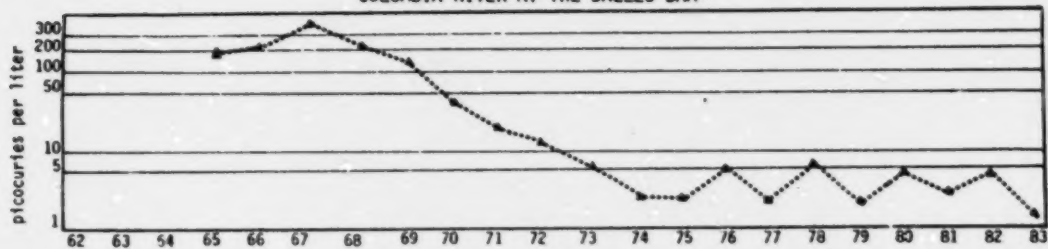
We believe the public must have confidence in monitoring data, and we are taking what steps are available within our means to improve that credibility.

Thank you, Mr. Chairman.

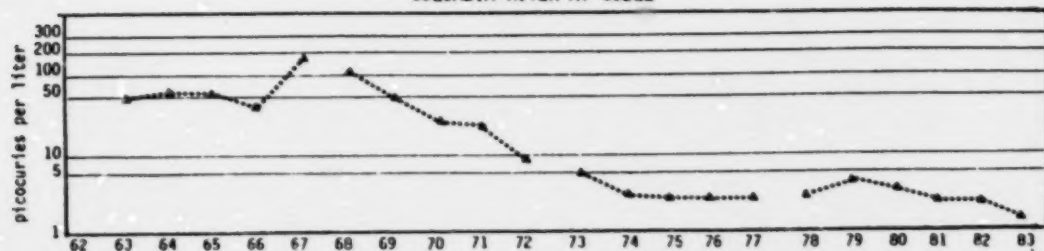
[The attachment to Mr. Boedigheimer's prepared statement follows:]

AVERAGE GROSS BETA ACTIVITY IN SURFACE WATER IN OREGON 1962-1983

COLUMBIA RIVER AT THE DALLES DAM



COLUMBIA RIVER AT GOBLE



ATTACHMENT

Mr. MARKEY. OK. Thank you, very very much.

Before we begin questions from the congressional panel, I'd like to give Mr. Lawrence a chance, if he would like, to rebut what he might have heard in the last half an hour or so.

I think that would perhaps set us up for a better set of questions, here, if you'd like to contrast your views with any of the opinions that you've heard from the various witnesses this morning.

Mr. LAWRENCE. Thank you, Mr. Chairman. I appreciate that opportunity. And obviously, we're dealing with an area that I think basically gets down to credibility and I understand and appreciate that.

And I will speak primarily toward what we're doing at Hanford, since that's my area of primary responsibility, in trying to reestablish credibility of the department. Recognizing we have experts, we have the equipment, but as you have noted, and as the other panel members noted, without credibility, that valuable resource is wasted.

We have taken a number of steps to help increase that credibility by working with the State, and by inviting the State on site to do monitoring. We are working with Oregon, as well as Washington, and opening up a dialog with the citizens and State officials, to help increase the understanding of the work that we do and the data which we release.

And I believe that those steps to increase credibility are as effective, if not more effective, than the bill would provide for. It's a complex subject. With regard to the fire, I remember that very well. I remember I called out the monitoring people myself, and said that there's a fire on the site; it was not burning any areas that had been contaminated or used for waste disposal or storage of any means. It was just burning over the prairie land, but we said, because of the potential that it could burn over some area where there had been some contamination, we had the monitors out.

Mr. Price may not have been aware of it, but I was very familiar with it, and I know that data was collected and was made available.

With the charge about PUREX and plutonium releases from PUREX, the plant was shut down because of thorium daughter product releases. Plutonium releases were slightly greater, 0.6 times greater than we had projected in our environmental impact statement, but far, far below standards in any event.

However, because of the concerns about that, consequently, we had a tour of the PUREX plant where members of the media plus their own independent consultant, Tom Cochran of NRDC, went through the plant. And upon his completion of that tour, he made the statement that the citizens of the Northwest have nothing to worry about from plutonium releases from this plant. He had other concerns, but the plutonium releases were not a concern.

So, it's a complex area, and I understand and certainly appreciate the concerns of the panel members, and of the committee, about our credibility. But we are working to reestablish that, and I think the steps we've taken with the State of Oregon, and the State of Washington, will do that.

Mr. MARKEY. Thank you very much, Mr. Lawrence.

all right. The Chair recognizes the gentleman from Oregon, Mr. Wyden, for questioning.

Mr. WYDEN. Thank you very much, Mr. Chairman. I want to thank all our panel members for a first rate job, that really gives us an idea what the key issues are. Dr. Weiner, I think you really put your hand on it, and that is that if there's no problem with health and environmental emissions there, why in the world wouldn't an agency want an independent validation of it.

And I come back to that again and again when I examine this issue. It seems that the only reason you don't want an independent evaluation is, in fact, if you have something to hide.

I would just like to pass on to you, Mr. Lawrence, in beginning, a little question with respect to another part of our Government, the U.S. Navy.

U.S. Navy recently went to the Environmental Protection Agency and they, in effect, asked the Environmental Protection Agency to monitor the areas where the Nuclear Navy is located for environmental and health problems. They went to the Environmental Protection Agency with a very simple message. What they said is, we'd like you to monitor the waters where the Nuclear Navy is located because we know that if we say everything is OK, a lot of people aren't going to believe us.

And I think that is a classic example of the way an agency ought to handle this kind of thing. It should be forthcoming, and be looking for ways to have an independent validation of what they are doing. I think the Navy is to be held out as an example of how to handle these kind of matters.

I would urge you to go back and mention to your superiors at the department that that seems, to this Member of Congress, as a way to proceed. Let me begin with some questions for you, Mr. Lawrence, with respect to PUREX.

Now, PUREX was restarted in November 1983. It was restarted after being shut down for 12 years. Now, it was operational for only about 2 months, and the facility was then shut down, we're told, because DOE and the contractor, Rockwell, were concerned about a large amount of plutonium escaping up the 200-foot smoke-stack there at PUREX.

Now, there was an in-house review and at some point along the way, Hanford officials determined that there wasn't too much plutonium escaping up the stack, and then the facility was restarted.

Now, Rockwell documents were obtained under a Freedom of Information request. And what those documents showed was that the amount of plutonium that had escaped the plant prior to the shutdown was several times more than the Department and Rockwell had stated, and had stated publicly.

What was the reason for the discrepancy in that case?

Mr. LAWRENCE. OK. Sir, with regard to the release, the plant was originally shut down in January because alpha emissions were higher than the standard would allow. Alpha could be attributed to plutonium or other products. The plant was shut down. It was later determined, because of the decay characteristics of the radioactivity that it was not the alpha emissions were coming from thorium daughter products, not from plutonium.

So, point one is the plant was not shut down because plutonium emissions were too high. It was shut down because alpha emissions which were later shown to be thorium daughter products, caused the plant to be shut down.

With regard to plutonium, the Department had estimated plutonium releases from the facility, in its environmental impact statement required for the startup of the plant, and they said that the releases would be a certain number which, as I stated earlier, would be very very far below permissible levels.

What we found, and were reported and released after that event, was that the releases of plutonium were higher than originally estimated in the environmental impact statement by 60 percent. But still orders of magnitude below standards, so the shutdown of the plant was not due to plutonium, but thorium daughter products.

Plutonium releases were higher originally than we had predicted in the EIS, but subsequently have been brought below, and on the average for last year, were at or below the levels projected in the environmental impact statement.

Mr. WYDEN. So you're accepting my basic point, though, that there was a discrepancy between what the Department said, and what the freedom of information documents said. But you still say that it was safe.

Now, let me ask you, is the plant safe now?

Mr. LAWRENCE. Yes, sir.

Mr. WYDEN. I guess I just have to keep coming back to these instances. And the panel members went through others. The Rockwell public affairs specialist mentioned earlier, when the plant was restarted, was quoted as saying, you can stand right next to the stack, and you wouldn't get any more radiation than you would get in your own basement.

And yet, a few months later, the department is having a press conference saying that that wasn't correct. We can go through one instance after another. How can you make a case for saying that credibility is improving in any significant way, when we have instance after instance where the Department says one thing, and then later on, either through a press conference the Department has to hold, or through Freedom of Information Act documents, the facts prove otherwise?

Mr. LAWRENCE. Well, sir, when the PUREX plant was shut down, it was said it was shut down because alpha emissions were higher than allowed, and it was conceivable it could be plutonium, so it was shut down for that. It was later found, with the data, that it was not plutonium. So it was not a case—

Mr. WYDEN. We've gone through that, Mr. Lawrence. Do you agree with the statement of the public affairs specialist that you could have stood right next to the stack and wouldn't get any more radiation than you would get in your own basement? Is that a correct statement?

Mr. LAWRENCE. I would not have made that statement; and I think that since the stack is 200 feet high, it would depend on how close you were to the stack. It disperses very quickly.

Mr. WYDEN. It's pretty clear to me that your own department indicated that that statement wasn't correct, that's one of the reasons that we need this legislation.

I want to ask about another situation with respect to missing plutonium. In October 1984, PUREX was shut down for a month without notice because 10 to 13 kilograms of plutonium—that's about equal to the amount that was used in the atomic bomb dropped on Nagasaki during World War II, was missing. Now, in November 1984, a Department spokesman said the October shutdown was due to what he called a scheduled annual inventory.

Now, a Rockwell scientist was quoted as saying, and I quote here, "Everybody who works at PUREX knows the plant was not scheduled to be shut down in October. How can these people lie like that?"

So, I guess my question to you is, which was it? Was it a scheduled inventory or an unscheduled shutdown to go out and try and find the missing plutonium?

Mr. LAWRENCE. Sir, there was a scheduled shutdown in September to do an inventory of the plant. That was scheduled and it was conducted. Upon the initial findings of the survey, we determined that we had an inventory discrepancy which I therefore said the plant will not startup until we resolve it.

I think this is an indication that we do not stress production over safety and protection. Consequently, the extension of the shutdown was not scheduled. So I think both people were correct. It was a scheduled shutdown, but the extended time it was shutdown was an extension, an extension which I required, because we were not going to start the plant back up again until we had the inventory discrepancy resolved.

Mr. WYDEN. I think that is just an incredible statement to make, Mr. Lawrence, that you agree with the Rockwell scientist; he's calling your department liars. He said that specifically.

Mr. LAWRENCE. Well, sir, I don't agree with the tone of his statement, and in fact, it is a classified matter when an inventory is taking place, but we did announce the results of it, and public information was made available on the inventory and the results of that survey.

Mr. WYDEN. Do you think the Department has a credibility problem?

Mr. LAWRENCE. Yes, sir.

Mr. WYDEN. Why do you think it's got a credibility problem?

Mr. LAWRENCE. I think, when you look at the formation of the Atomic Energy Commission coming out of World War II and the Manhattan Project, there was an obvious and justified need for national security and secrecy. Times have changed and they've changed drastically. And I think the Department, the Atomic Energy Commission, and the Energy Research and Development Administration, have been somewhat slow to change in that.

But I think there is a clear indication from the activities of the Department, Secretary Herrington has made it very clear to all of us, about open operations with the public, improve our credibility, share information, and I think we've grown out of that. But we have a lot to recover.

And I think we are making very good steps in that regard, but we have a long way still to go.

Mr. WYDEN. Well, what additional steps are going to be taken beyond what's been done today, if say, we set this bill aside, Mr.

Lawrence. Because it is clear that the citizens of Oregon and the Northwest, are not at all satisfied with what has been done today about the dialog with the citizens I think people appreciate it, but we are light years away from something that they'll be satisfied with.

You might be interested to know that I wanted to have more witnesses today who were opposed to the legislation, and I couldn't find any. There wasn't anybody else out here that was opposed to the bill. I'd be interested in knowing what additional steps you are willing to commit to today to solve a credibility problem that you say still exists, and are willing to take additional actions to try to resolve.

Mr. LAWRENCE. Well, I cannot speak completely for the Department on this. I know that each of our operations offices is working with the State in which they are located, are working very hard to do that. I know, in South Carolina, with the Savannah River Plant, and here at Hanford with the State of Washington, we are working with the cognizant State agencies to give the State a presence and we have available data and a monitoring capability to verify, check, and confirm our findings.

I'd like to point out an example when that's been extremely useful. Earlier this year, there was an ammonium nitrate release from the PUREX plant which contained some quantities of ruthenium in it. As soon as it was discovered, we shut the plant down, and we sent out our monitors, monitors which were under my control and I got out immediately to ensure that we had good data to determine if anything was going from the PUREX area or, in fact, off-site.

At the same time, since the State of Washington has monitors on-site at the U.S. Ecology Low-Level Waste Burial Ground, we called the State of Washington, informed them of the ammonium nitrate release, and asked if their monitors would also join ours, as an independent verification, which they did. And I think activities like that help to reestablish credibility and our actions taken at DOE sites to help do that.

Mr. WYDEN. I just want to ask one other question, just for the record, Mr. Lawrence.

If the citizens of our region, the citizens of Oregon and Washington, knew that Hanford operations had to meet the same standards as all the other nuclear plants and if they heard it from an independent source, somebody who wasn't producing it, do you think that the Department's credibility would be enhanced?

Mr. LAWRENCE. Yes, sir. I do, and that's why we give our data to the States so they can look at it and confirm whether or not they believe it's accurate.

Mr. WYDEN. Well, the States are here backing the bill, Mr. Lawrence. That's why we had the States here, so they clearly don't think the process is adequate, either.

I guess, Mr. Lawrence, more than anything, I'm just baffled by the Department's position. I come back to what Dr. Weiner said.

Dr. Weiner said in her testimony, the first thing that I'd want in this area is for somebody else to say that it's being handled in a reputable objective way. What you're really saying to the people of the Pacific Northwest, when there have been documented instances

of missing plutonium and serious instances of seepage into the river, you're saying, trust us.

You're saying, trust us. And I think it's a major mistake. I think you're a talented guy, and I think most of the people in our congressional delegation do. And I'd like to see you up at Hanford trying to run this plant, rather than having to be out on the public relations circuit all the time, coming to congressional hearings, and giving us, I think, inadequate justifications about why we ought to keep doing business the way we are.

I'll have some more questions as we go along. Mr. Chairman, I appreciate your giving me a bit of extra time, it's important to our constituents and the people of Oregon. And I appreciate the consideration.

Mr. MARKEY. Thank you. Let me stop there and just see if there are any other members of the panel up here who might want to comment on what they've heard up to now. Dr. Weiner?

Ms. WEINER. First of all, I'd like to say that the situation which I've been observing for 11 years, since I moved to the State of Washington, the situation at Hanford really has improved markedly since Mr. Lawrence came as director of the Hanford Operations Office.

But I think he has to realize, as DOE does, that it isn't always going to be Mike Lawrence, and it isn't always going to be this DOE, and it may not, it isn't always going to be an administration that for whatever reason, and whatever motives, feels it necessary to relate to the public.

There is still, within DOE, plenty of the idea that we're building an atomic bomb and you can't look over our shoulders. And as long as that exists, anywhere, we've got to have an independent monitoring agency. So this is not—I just wanted to make the point that Mr. Lawrence has been exceedingly open and your citation of the statement made by the Rockwell PR person is just an example.

Mike Lawrence can't do it all; you can't change the agency overnight. That's the only point I wanted to make. Thank you.

Mr. MARKEY. Mr. Buchanan?

Mr. BUCHANAN. Well, I think, and contrary to what Dr. Weiner has said, that the situation since Mr. Lawrence's arrival has not improved, but it's declined. Not because of Mr. Lawrence, but because the PUREX plant has restarted. And there's an incredible amount of plutonium and radioactivity that's now being released into the atmosphere that wasn't, before.

And one of the things that we've seen, just in the environmental study of 1984, is that there's been a doubling of off-site radioactivity that's been measured around the environment of the Hanford site.

I think one of the things that would show Mr. Lawrence's honesty and openness to the public would be if he recommended to the Agency to release all of the historical data from all of the sources at the site since day one, since 1943, of all of the radioactivity, the levels and the sources, at the Hanford site. I think, frankly, the public would be shocked, but it has to be done. At some point, the public has to know what's happened at Hanford, and what is continuing to happen at Hanford.

And I think, frankly, they're sitting on a liquid nightmare. I don't think there's any person in their right mind that wants to release that data, that the amount of surveillance that the public would be open to would be shocking. But it has to be done, whether it's under Mr. Lawrence's administration or under somebody else's administration, I don't care. I just want that released, and I think this EPA bill that Mr. Wyden has recommended into Congress would be a start to that level.

I think the EPA has to do that; they have to examine historic releases and release those to the public.

Mr. MARKEY. OK. Let me just give a little bit of a background, and then we can move into another group of questions.

And that is that PUREX is an acronym for plutonium uranium extraction, and PUREX' business is the extraction of plutonium for nuclear reactor wastes. The plutonium is then used for the production of nuclear weapons. Now PUREX first operated from 1956 to 1972, the plutonium in the Nagasaki bomb was extracted at the PUREX plant.

PUREX began operating again in November 1983, in response to President Reagan's defense buildup. The PUREX plant gives off dozens of times more radiation than a nuclear power reactor would. Now, Mr. Lawrence, the PUREX plant at Hanford had an accidental release on January 25, 1984. I would like you, to take several minutes to walk us through the events leading to the release, the release of the radioactive material, the followup and the response of your personnel to these events as they occurred.

Mr. LAWRENCE. Yes, sir. I was not the manager of Hanford at that time, but I will summarize to the best of my ability. I will not have all the exact dates off the top of my head to give you.

But, as I said earlier, alpha levels were higher coming out of the stack than our operation limits allow. And the operation limits are not limits associated with EPA or other standards off-site, but very strict standards we set on our operations to monitor and ensure that our operations are within standards.

The plant was shutdown. We had to analyze the samples and that took some time, and it was not announced at the time that the plant was shutdown. I have now put in a new press policy, where a shutdown of a facility would be announced immediately. And that has changed.

Consequently, as the data came in and it was collected, we did find that it was thorium daughter products, causing the alpha particles. The analysis also showed to us that plutonium levels, while still far below allowable limits, was about, as I said, 60 percent higher than we had estimated in our environmental impact statement.

And, again, I want to stress that those levels in the impact statement were orders of magnitude below standard, so the 60-percent increase would not have changed our conclusion that the site could operate, and the plant could operate safely.

Mr. MARKEY. Can I just throw in some data here, and perhaps you can corroborate or contradict it, OK.

From documents released from the Richland operations office, it appears that monitoring equipment from January 6 to January 12, 1984, measured radioactive releases 10 times greater than allowed.

Then, on January 25, DOE took a sample from the stack during the afternoon operations, and this sample showed releases 200 times the allowed limits on plutonium.

On January 26, monitors showed releases at the allowed levels.

The following day, DOE performed a decay analysis which showed that the material which was released was not plutonium as DOE had thought earlier, but thorium daughter products. Is that correct?

Mr. LAWRENCE. Sir, I don't have the data in front of me to confirm it. I'd be happy to provide it for the record.

[The following information was received:]

The sequence described by Mr. Markey is approximately correct. However, it should be clearly understood that the "limus" being discussed are internal facility limits to control plant operations. They are measured in the stack itself and do not represent limits for environmental protection. It should also be clearly understood that at no time did releases from PUREX even come close to exceeding environmental protection limits established by the EPA and DOE. While no EPA or DOE limits were exceeded, it is important to note that a discussion of 2 times, 10 times or 200 times our internal limits is reasonably complicated and one which would be best dealt with in a briefing. If the committee desires members of my staff would be pleased to give a full briefing on the January 1984 PUREX release event. In the meantime, a copy of the extensive investigation report of this event is enclosed for the record.

With regard to Mr. Markey's question on the type of material released from the PUREX stack at the time in question (January 1984), past reprocessing operations in PUREX included thorium fuel. Residual material in the plant, left from the 1969-71 time period resulted in release of thorium daughter products. This residual material in the plant's 300 miles of piping resulted in the release of thorium when plant operations were resumed in 1984.

Mr. MARKEY. I mean, does this information sound like information which has been made available to you as the manager?

Mr. LAWRENCE. Yes, sir. But there are some important things left out, such as, if the release was 2 times, 10 times, 200 times the limit, the limit where? If it's the limit at the site boundary, and we're monitoring it in the stack, it's comparing apples and oranges.

Consequently, it is not a valid comparison. What is in the stack, if that's greater than the concentration levels at the site boundary, by the time it would get to the site boundary, it would be completely dispersed, so you would not have that problem.

Also, if the levels were higher than plutonium, but in fact the source of the radioactivity was thorium daughter products, then in fact it would not have been higher than the standards, so those are all questions and details that are very important to the conclusions raised in those statements, and I'd have to have the data in front of me to verify it.

Mr. MARKEY. And you don't know that right now?

Mr. LAWRENCE. I do know, sir, that no standards were violated or exceeded. Operating limits were exceeded but those did not result in any standards being exceeded. The DOE internal operating limits were exceeded and that is not the same as saying EPA or Federal or State limits at the site boundary were exceeded. At no time during that event were—

Mr. MARKEY. Well, what if the EPA standards had been applied. Would they have been violated?

Mr. LAWRENCE. No, sir. They would not have.

Mr. MARKEY. They would not have been?

Mr. LAWRENCE. No, sir.

Mr. MARKEY. Yes, Ms. Oleksiak?

Ms. OLEKSIK. I have a couple of questions and a comment, if I may.

Plutonium remains toxic for a quarter of a million years and I have a question for Mr. Lawrence. Where does that plutonium go and if it falls onto the site, what is happening to it?

And then, the second part of that question is the PUREX plant has opened for a processing campaign that is 16 years long. If, in the first year of operations, we are seeing in the 1984 environmental monitoring report, that there is plutonium off-site, what will be the result after 16 years of operations?

Mr. MARKEY. You are asking that question of?

Ms. OLEKSIK. Mr. Lawrence.

Mr. MARKEY. Mr. Lawrence?

Mr. LAWRENCE. Sir, the doses which we calculate for plutonium and other radioactive releases take into account the cumulative effect and buildup over years. I'd like to point out that this year we were able to monitor, for the first time, plutonium off-site, and there are reasons for that. We have never said that plutonium would not leave the site. We have said the levels were so low as to be undetectable.

This year, with the monitoring equipment and capability that I mentioned in my testimony which we have developed and continue to develop to lower and lower levels of detectability, we were able to detect for the first time a value of 3×10^{-18} curies of radioactivity per cubic meter of air. And the average variation within the United States, not just around nuclear plants or DOE facilities, ranges to even higher than that to 4×10^{-18} so we were well within the background. We were able to measure it, but we were measuring it because our detection capability had increased and improved to such a level.

Mr. MARKEY. OK. Let me go back to this question of the leaks. The documents released again from the Richland operations office indicated that the monitoring equipment found radioactive releases 10 times greater than that allowed.

Now that's your own internal documents, OK, on that question. And my question to you is, if the releases were 10 times the allowed limits during the second week in January, according to your own documentation, why did you wait until January 25, when they had climbed to 200 times the allowed limits, before taking the sample from the stack during operations?

Why would it take that long?

Mr. LAWRENCE. Well, the samples had gone to the laboratory, is my understanding, for analysis. But let me clarify. I believe—and I'll have to verify this, sir, and I apologize for not having it on the tip of my fingers, but I believe that the limit that was exceeded 10 times or 200 times, was our own internally imposed operating limit.

Mr. MARKEY. Well, that's fine, but why—I mean, with your own internally imposed limits, why would it take that period of time to in fact come up with that kind of information and why would it be allowed to rise to 200 times your allowed internal limit, before taking the sample from the stack during operations? That's what I don't understand.

Mr. LAWRENCE. Sir, it took time to get the samples back that were taken in the early January measurements.

Mr. MARKEY. I understand that, but those early January measurements were 10 times the allowed limit.

Mr. LAWRENCE. But when they came back, that is when additional samples were taken to check on it. And again I would be happy to provide a detailed record of that for the subcommittee.

[A document entitled "Report of the Investigation of the PUREX Stack Emissions, January 25, 1984," was submitted by the Department of Energy, and may be found in subcommittee files.]

Mr. MARKEY. I understand that, but again, the question really is, was the stack monitoring system working throughout the month of January?

Mr. LAWRENCE. Sir, we have identified and made improvements in the stack monitoring system as a result of that release.

Mr. MARKEY. So, you're saying that the primary monitoring equipment failed during that period of time?

Mr. LAWRENCE. It is my understanding that at that time there was not an ability, first of all, to distinguish between the plutonium and the thorium daughter products, just a straight alpha determination. We have changed the monitoring in the stack and, as I said, over the total of 1984 and in particular, the last half of the year, the releases were far below our limits.

Mr. MARKEY. All right. So the primary system failed, and the back-up monitoring system failed when it didn't set off an alarm, is that right?

Mr. LAWRENCE. Sir, that system was not in place.

Mr. MARKEY. Was not in place.

Mr. LAWRENCE. That has been put in place since then.

Mr. MARKEY. OK. Well, let's ask then, what is the state of the monitoring equipment at the plant now? The history on this is very hazy. The equipment at this plant and what kind of guarantees we have that the internal monitoring system is in fact effective.

What problems have you had to date with the monitoring equipment at the plant?

Mr. LAWRENCE. Since this incident we are talking about I am not aware of any problems with the monitoring equipment.

Mr. MARKEY. So there has been no problems, then?

Mr. LAWRENCE. Since we put in new systems and improvements as a result of the January 1984 release.

Mr. MARKEY. OK, and when did that new equipment go into place?

Mr. LAWRENCE. I believe it went in the summer of 1984.

Mr. MARKEY. The summer of 1984, so since that time, there have been absolutely no problems with the monitoring equipment?

Mr. LAWRENCE. Not that I'm aware of, sir.

Mr. MARKEY. You would be aware, though, would you not? Is that not your responsibility?

Mr. LAWRENCE. It depends on the level of any difficulties. I would know certainly it's in operation and it's working and we're not aware of any releases that it has noted. And we do that. That's in the stack, itself, sir, but we also do the monitoring outside the plant from the stack itself, all the way out to the site boundary and

beyond, and nothing in our monitoring picked up any releases that would suggest it was not working.

Mr. MARKEY. How long is the monitoring equipment tested by DOE?

Mr. LAWRENCE. I don't know the answer to that.

Mr. MARKEY. You don't know the answer?

Mr. LAWRENCE. No, sir. We have a quality assurance program for all of our environmental monitoring equipment and activities, and how often an instrument is checked will vary depending upon the equipment itself, and where it's located.

Mr. MARKEY. OK. But, if it were checked, defects would be caught, then?

Mr. LAWRENCE. Yes, sir.

Mr. MARKEY. So then, without question, the system was deficient in January 1984?

Mr. LAWRENCE. Sir, that system was not installed at that point in time, so it was not deficient.

Mr. MARKEY. I understand that. What caused the release at that time?

Mr. LAWRENCE. There was a buildup of thorium in the fuel and in the startup of the plant, it is my recollection that, while the plant was shut down over the 12 years, the thorium daughter products remained in the piping system of the plant. I believe there are approximately 300 miles of piping in that facility, and as the plant started up, those thorium daughter products were released as a result of startup. I would like to be able to verify that, though, for the committee.

Mr. MARKEY. Do you think it might be useful to have a robotic chimney sweep clean the stack?

Mr. LAWRENCE. Sir, it was not in the stack, itself. It was in the process equipment.

Mr. MARKEY. Oh, in the process equipment. Do you have any meteorological data?

Mr. LAWRENCE. Yes, sir.

Mr. MARKEY. To determine where the release is carried by winds or air currents?

Mr. LAWRENCE. Yes, sir. And that is reported in this environmental monitoring report that I showed you that has been discussed. That event would have been picked up and was included in this data.

Mr. MARKEY. Could you summarize that for us?

Mr. LAWRENCE. The release off-site? It would have had to be calculated, and it was not detectable off-site.

Mr. MARKEY. Not detectable off-site. When was the State of Washington notified of the release?

Mr. LAWRENCE. Sir, I don't have the answer to that. I'll have to provide that. As I indicated, sir, I was not here at that particular point in time, so I'm working from recollection.

[The following information was received:]

The effluent measurement problems did not result in any releases to the environment in excess of, or even significantly approaching, any EPA or DOE radiation standards. On that basis, it was not, at that time, required or a practice to notify the State.

Mr. MARKEY. Just for the record, Governor Gardner reported that he read it in the newspaper, so I think that that's a—

Mr. LAWRENCE. Well, Governor Gardner was not the Governor at that time, sir. It was Governor Spellman.

Mr. MARKEY. OK. When was the public notified, then?

Mr. LAWRENCE. Sir, I believe that it was about a week later, and as I indicated, that has been corrected.

Mr. MARKEY. When Tom Bauman, the DOE spokesman for the Richland Operations Office, was asked why the people of Richland should not be alarmed by the January release, here's what he said:

We have incidences happening over here all the time. This emission produced no fatalities or serious injuries, there was no significant contamination to people or property, so we didn't announce it.

This statement, I don't mind telling you, sends chills down my spine. How many incidences do you have at this plant? What level of public confidence do the citizens of Washington and Oregon have, that people in the Richland operations office can routinely dismiss these kinds of incidences, when the real problem is that, many of the health effects of radiation don't show up for decades? Cavalierly or blithely dismissing these kinds of incidences in that kind of manner doesn't in fact help build confidence. In fact, it helps to undermine it.

Would you agree with that?

Mr. LAWRENCE. Well, sir, although Mr. Bauman was correct in saying that there were no releases off-site which exceeded standards and consequently no harm to the public would be expected from it, as I indicated, we have changed our press policy, and I currently believe that our daily press policy at Richland is the most open of any industry in the Northwest. Releases such as that are reported immediately and even minor incidents are put in a public reading room and made available to the press.

Small things, such as drain covers not being in place, are routinely reported right now, so we have made great strides in informing the public of our activities?

Mr. MARKEY. I'm sure that the people in Spokane or Portland would rest a lot easier if they had monitoring facilities in their cities. Do you think that that might be something that DOE would consider installing? It would help people sleep a little bit easier at night.

Mr. LAWRENCE. Yes, sir. I do. And we have monitoring facilities going out about 50, 60 miles from the plant going toward Spokane, for instance, and because the levels are so low, it's very very difficult, if not impossible, to detect any levels at that particular point.

Nevertheless, we would consider putting detection equipment in Spokane, and I think, going one step further, we've invited the State to put detection equipment on-site, as they have started to do, to help provide that assurance. Certainly, if you see it on-site, you would see it there before anything would get off-site.

Mr. MARKEY. But what about actually in the cities? Is that something that you'd consider?

Mr. LAWRENCE. Yes, sir. I have to balance the benefit of that if we're 50, 60 miles away, and do not pick anything up.

Mr. MARKEY. Well, you don't pick anything up until there might be an emission, and then you'll pick it up.

Mr. LAWRENCE. No, sir. Even in the emissions, such as the PUREX emission you talked about, even in those instances we could not detect it off-site. So, consequently, the value of that would have to be assessed; but if I thought it would increase credibility and not be prohibitively expensive, and we get the funds from Congress, we could do so.

Mr. MARKEY. My time has expired. I'd like to again recognize the gentleman from Oregon.

Mr. WYDEN. Thank you, Mr. Chairman. Mr. Lawrence, one of the things that I picked up that I think concerns Northwest citizens in particular, is how far the radiation plume, coming from PUREX, travels before it breaks up and in effect is no longer hazardous.

Now, there was a joint study begun in 1982 by the U.S. Weather Bureau, the Air Force and the Savannah River Plant in South Carolina, that showed that the krypton plume from the Savannah River Plant dispersed by only two orders of magnitude by the time it reached Fayetteville, North Carolina, 200 miles away.

Now, of course, Portland is about 200 miles away from Hanford, and I think this is one of the reasons our citizens have been concerned about it. Now, in addition, the Savannah River contractor, duPont, had calculated that the plume completely dispersed by the time it left the site boundaries, making duPont's calculations off in effect by 13 orders of magnitude.

Now, my question to you is, have you done any studies on plume movement from the PUREX plant?

Mr. LAWRENCE. We have done studies, not directly related or similar to the Savannah River Study. I would like to point out, those were preliminary findings of which everyone really wanted to go back and check the data because it did not seem to jibe with any agency, the EPA, or anyone else's understanding of that phenomenon, and a final report, on my last check, which was about a month and a half ago, had not been issued on that particular study.

Certainly we are aware of it, and are looking for a final report, so we can determine reasons for it, and how that could change our calculations. But we do have monitors completely surrounding the Hanford site which would pick up a plume, even if it did not disperse; even if there were a spike and it remained together, a number of monitoring stations could and would pick up any radioactivity passing over.

Mr. WYDEN. Well, then how far have radiation plumes moved in our area to date, Mr. Lawrence? What's the farthest they've moved?

Mr. LAWRENCE. I can't answer that question because I don't believe you can state the plume moving, an airborne plume moving. There is a continuous extremely low concentration of radionuclides and other emissions coming from the plant, as from just about any plant, and its concentrations and concentration levels detected at our monitoring stations accumulate over a period of time, and give you a reading.

Mr. WYDEN. Well, you know, it makes me come back to the point that is really the genesis of this whole effort. You really don't know.

You said that the South Carolina findings, in your view, are preliminary, and inconsistent with other data, and that the current system you think will pick it up, but you're not really sure. I'd like to see you all do a study of this particular issue, and see what the movement of the radiation plume is once it's left PUREX, and make it public.

Mr. LAWRENCE. Sir, we have that data, not in a specific study but that data is contained in the reports and was a subject for discussion at the Olympia meeting that was held with the State of Washington, and I would like very much to offer to have a similar meeting here in the State of Oregon with Oregon State officials, so items such as you're discussing could be discussed by the experts.

I think that would be very useful.

Mr. WYDEN. Would you be willing to do it with the Environmental Protection Agency?

Mr. LAWRENCE. Present? Yes, sir.

Mr. WYDEN. Well, I'll explore that with the chairman, because I think that would be very helpful, and I think that's the kind of information people want to know.

Everything that I have heard, both on the basis of the study you mentioned, and your testimony here today, is you don't really have this data. I'd like to see you get it, and I appreciate your willingness to look at doing it with EPA. I think that's the kind of approach that our citizens want.

Mr. LAWRENCE. Sir, I'd like to just add one thing. I think that data, and data to better answer your questions, does exist and it exists with our environmental monitoring experts, not with myself; and that's why I believe a meeting between the data experts, EPA, and our experts, would be very desirable, so they could explain what they have found in the many years of monitoring and testing that they've done.

Mr. WYDEN. Well, that certainly makes sense. Now, one other area that's important to me, Mr. Lawrence, in 1983, the EPA proposed radiation emission standards for the DOE facilities that included a maximum annual release of 10 millirems per year to any member of the public.

At the time, EPA said almost all the DOE facilities met the standard. And that the others could meet the standard by using emission control technology that was available at that time. In 1984, EPA, under what was reported as very intense opposition to the standard, both from the Department of Energy and the Office of Management and Budget, scrapped the 10 millirem standard.

In March 1985, under a court order, EPA issued a 25 millirem per year standard for DOE facilities. And that's the same standard that the commercial facilities have to meet. Unfortunately, EPA had to put in a loophole, a very large loophole, providing a waiver that DOE emissions could go as high as 500 millirems annually.

My question to you is, why did the Department of Energy put a lot of pressure on EPA, to provide this loophole that would allow for a waiver to go up as high as 500 millirems annually, something

on the magnitude of 8 or 10 times than is allowed for commercial facilities?

Mr. LAWRENCE. Sir, I'd have to pretty much speculate on all the reasons why, but I think you have to look at the benefit of reducing the limit versus the cost imposed by putting in equipment to ensure positively that it is met.

The limit that you talked about of 10 millirems or, subsequently, the 25 millirems number that you talked about, when you look at our DOE operations right now, last year, we calculated that an average person living off-site would get less than one-tenth of 1 millirem, and the maximum individual would get 2 millirems, and that was due to N-reactor operations that we've put in some systems to correct and get it back down to the 1 millirem level.

The 10 and the 25 are somewhat arbitrary limits. Just living in the United States, a person receives on the average of 100 millirems per year, just natural background radiation, and on airplane travels cross country, as you frequently take back to Washington, DC and home again, you get 5 millirems. So balancing what is an acceptable amount when you consider the operations of the Government, the cost of doing those operations, and what Congress gives us to spend on our operations, and also pollution abatement, that all has to be factored in.

And consequently we could not see any valid justification for reducing the limit down to 10 millirems, and forcing expenditure of dollars to ensure that, when in fact our operations were already far below it. In order to ensure you stayed below it, you would probably have to add costs and equipment that would not be necessary.

Mr. WYDEN. But why did the Department push EPA to go to 500 millirems? Why did the Department push for a waiver big enough to drive a truck through? I mean, all the things that you're saying essentially tell us we have nothing to worry about, that things are safe, that everything is well below the levels where the public would be at risk, and we set that on one side, and then we look at the documented public record of the Department pushing for things that are far in excess of the kind of standards you're talking about.

It just doesn't square to anybody whose trying to compare the two sets of activities.

Mr. LAWRENCE. The 500 millirems number was the limit prior to this that the Department had designed all of its facilities to ensure they met, and they were far better than met. So we said, keep it at the same level because the proof is in what we're doing; look at the levels released which were, as I said, on the order of 1 millirem or one-tenth of 1 millirem, very very far below that.

Even with the 500 millirems standard, on August 5 this year, the Department lowered that 500 millirems to 100 millirems of its own doing. It hasn't changed equipment and our releases still are 1 millirem or one-tenth of 1 millirem far below it. But we've set that limit lower because we felt we could do that without a change of equipment and a change of how we operate at the facility.

The bottom line is the public is protected in great excess in any event.

Mr. WYDEN. Well, I'm not sure the public feels protected when the Department says that they need an exception which is four

times the standards used for the commercial facilities, but certainly that's progress to go from 500 millirems to 100.

One other question, Mr. Lawrence. According to the Environmental Protection Agency, commercial nuclear power plant may discharge 50,000 curies of krypton-85, the radionuclide, annually. At peak capacity, it's been reported that PUREX will discharge 3.3 million curies of krypton-85. That's 66 times more than the commercial facility limit.

Is Purex running at peak capacity today?

Mr. LAWRENCE. No, sir. It's not. It's about one-third capacity.

Mr. WYDEN. Is the 3.3 million curies figure accurate?

Mr. LAWRENCE. I believe it is, sir. And the reason, though, that you cannot compare that EPA standard with a release from PUREX, is because the EPA standard was set, actually I believe it was NRC standard is what was set, based upon the benefit of producing power versus the amount of krypton you could release.

Consequently, the more power you produced, or the more burn-up in the fuel, the more krypton you could release, and so there is a calculation made to determine how much krypton can be released. From our defense facilities, our primary purpose is the production of plutonium, which has, as a consequence, a very small low burn-up. We are not in the business of producing power; we produce plutonium.

Consequently, if EPA or NRC were to set a standard for our facilities, they would have to take that benefit into account and not the burn-up. To use the current standard would be, comparing apples and oranges.

Mr. WYDEN. We've got PUREX operating at one-third capacity, you said just now in response to my question.

Mr. LAWRENCE. Yes, sir.

Mr. WYDEN. How many curies of Krypton-85 are being discharged right now, today?

Mr. LAWRENCE. I don't have the answer to that, sir. I'd have to supply that for you.

Mr. WYDEN. Well, is it 500,000, 750,000, 1,000,000?

Mr. LAWRENCE. Sir, I just don't know. I don't have that data in front of me.

Mr. WYDEN. Well, we'll hold the record open. It seems to me that's pretty important to know. As I said earlier, you're a talented and informed guy. I'm surprised you don't know that. What do you think it is? Take a guess.

Mr. LAWRENCE. Sir, I know it's below limits, or the plant would not be operating. That's the most important thing to know, and I do know that, but I don't know the amount in the stack today.

Mr. WYDEN. Is it below the commercial limit of 50,000 curies?

Mr. LAWRENCE. Sir, I just don't have that information. I'll have to provide it for you.

Mr. WYDEN. Well, we'll hold the record open for that because I think that would be very helpful to know.

[The following information was received:]

The quantity of Kr-85 released from PUREX on any given day depends on whether fuel element are being dissolved or not. If no dissolution is being performed, then no Kr-85 is being released. I believe your question is not directed to the actual quantity being released on August 14, 1985, but to the annual amount of Kr-85

being released currently. In CY 1984, 400,000 curies were released. In CY 1985 we expect to release about the same quantity. It should be understood that the Kr-85 as measured at the site boundary is 75 picocuries per cubic meter of air and the EPA and DOE limit is 300,000 picocuries per cubic meter of air. This equates to a dose of 0.001 millirem to the general public compared to the natural background level of 100 millirem. The commercial limit of 50,000 curies you mention is not a correct figure to compare to PUREX since that limit is based on benefit to man from nuclear electric power generation and not production of special nuclear materials. This comparison, although inaccurate, is often made.

Mr. WYDEN. Mr. Chairman, I'll have some more questions later but let me yield back to you, now.

Mr. MARKEY. Again, I thank the gentleman very much. Let's move onto that question, that is, the question of the difference between the monitoring of commercial nuclear facilities, and these DOE/Military facilities.

What is it, Ms. Ellison, that bothers you about having that kind of differentiation in terms of the monitoring standards? At its heart, what is it that bothers you about this?

Ms. ELLISON. Well, that if the standards themselves are based on doses to the human body, or to living organisms, and they are based on public health considerations, then the source from which they've come should not matter. That what is safe should be safe, and what's unsafe should be unsafe, no matter whether it was produced from a military facility or a civilian one.

Mr. MARKEY. And are you saying that there's a lower standard at the military?

Ms. ELLISON. They are allowed to emit larger standards, as we understand it. Mr. Lawrence may be absolutely correct that the majority of the time, they're well below any standards, no matter how stringent. But we just believe that if an independent agency were able to set those standards, and then also measure, audit them, that the public would know that, have more assurance of knowing that than from—

Mr. MARKEY. But you're saying, may be right, means you don't know for sure because you don't have an independent check?

Ms. ELLISON. That's right. We've not been able to do that at the Defense facilities.

Mr. MARKEY. Mr. Buchanan?

Mr. BUCHANAN. Well, one thing that bothers us is that plutonium is being produced out there and at a commercial nuclear plant, there's very little plutonium released. So we are much more worried about what is militarily produced, as well as the levels themselves, and of course, as we've actually pointed out today, there's no standards that we're monitoring against except the DOE and Rockwell's own standards.

In the case of the PUREX, incident, for example, in January of 1984, their own in-house standards were doubled after the incident. They were doubled to allow for the fact that there were increased plutonium and thorium levels. And thorium is not benign, and neither is radon. But especially plutonium is not benign, and that's what we're worried about.

Mr. MARKEY. And so, do you trust DOE to be able to do this? What is your problem, again? I mean, let's—

Mr. BUCHANAN. Not at all. You know, we haven't even really looked at this report, but we have had some discussions and one of

the things that we've raised to Mr. Price, head of Battelle, at this technical meeting 3 weeks ago, in Lacie, was that there were a number of gross alpha monitors on and off-site around PUREX, around the end reactor and downstream near Richland, and near the plutonium and pellet manufacturing facilities, were turned off for the whole year.

There were 16 gross alpha monitors that were shut off. There was no explanation that Mr. Price or any of the other people had for it. No one was fired. These monitors that generally measure 26 times a year, were basically shut off. We had a lot of serious questions about that. We thought that was a gross violation of responsibility.

They also don't have any on-site—as Mr. Lawrence pushed through—they don't have any monitors that are measuring on a daily basis, the plutonium releases.

What happens if there's an accident and stuff does move off-site. Are the monitors that are in place right now going to be able to measure that? We say, no.

Those monitors might pick up an average or they might pick up something in 2 weeks when they go out. But what happens if they're shut off, even? We'll never know. And I think there's been a number of cases over history, over time, where that's been the case. And that we really don't know. That's a haunting question.

Mr. MARKEY. All right. Dr. Weiner, why don't you trust the DOE? What is the problem?

Ms. WEINER. Well, it's been very difficult to get information out of DOE. If you're an organization, you do a little better. If you're a state you do a little better. If you're just a citizen, you don't do very well at all.

The question that you raised before, Mr. Chairman, about why there weren't monitors in Spokane, I asked DOE that. Spokane is a big city, and the people there are concerned, and at the time, this was, oh, in the fall of last year, and I was talking to some DOE people in Washington, DC, about this. I said, well, so put a monitor—so, if the people in Spokane are worried, put a monitor in Spokane. What are a couple more monitors to you?

And the answer I got consistently was, well, we have them out as far as Moses Lake, which is 50 miles. Isn't that good enough?

And the response is, no, it isn't good enough. If you're monitoring it's going to show that there isn't any alpha, then why not just do it and it is the long lead time. I'm very happy to hear Mr. Lawrence say that they do intend to broaden their monitoring network. Why this was not evident immediately just mystifies me.

The other point I'd like to make, Mr. Chairman, is that there are other radioactive materials released from PUREX, and I'd like to pick up, for a moment, on what Mr. Buchanan said. Thorium is a radioactive element. It has a very long half life, very very long. The reason that you can tell what the emission—the DOE said the emission was thorium daughters and not plutonium—was that it has two relatively short life time daughters, one 1-hour and one 10-hour, so that you can see the decay of those.

However, the emission off-site was still emission of a radioactive material, which gets in the dust, which can be inhaled, which dust is around for an exceedingly long time. In addition, the Krypton

releases that Mr. Wyden mentioned, there's nothing you can do about those. The only way to cut back on those is to cut back on production. Krypton is an inert gas chemically; it gets out in these chemical processes. Trapping it would require using liquid nitrogen, and even then I think it would be difficult to do.

So you don't do it. And we find out these very large numbers, after the fact. If we had an independent agency doing this, it seems to me that you could require, for example, when one of these releases got out of hand and the krypton amount is enormous, that's a—*a curie*, by the way, is a lot of radioactivity, in case we're under any confusion there.

Then, you could have that agency impose a shut down or a cut-back. And that's really the point I believe of the legislation and that's why we don't trust DOE. You're asking DOE to do something to itself in the face of monitoring results, that it is in any case reluctant to do, and I'm not suggesting—I'm not casting aspersions on Mr. Lawrence's honesty or integrity.

But it's very hard to ask the Agency to impose that kind of restriction on itself that says when some kind of standard that we have set is exceeded, you shut down or you cut back.

Mr. MARKEY. My time has expired. The gentleman from Oregon?

Mr. WYDEN. Thank you, Mr. Chairman. Just a couple of others.

Mr. Lawrence, since PUREX issued its environmental impact statement, have the emission standards been adjusted upwards at any point?

Mr. LAWRENCE. The absolute standards for off-site releases have not been adjusted or changed in any way. The operational limits, which, as I said, were tightly controlled limits which we put on the process to make sure that we were operating well within the standards, were expanded, multiplied by two, as you pointed out, during that time, and I believe they've been brought back down again, but I am not sure of that.

But that is not—

Mr. WYDEN. So that was in 1984?

Mr. LAWRENCE. That's right. In January 1984, but that, sir, is not an indication that standards off-site or any standards based upon health and safety were exceeded. We put those tight operating parameters on ourselves to ensure the processes operating exactly as we propose and obviously, you'll always have some fluctuation around the norm.

We found that, at that time, a greater fluctuation around the norm was to be expected, so we increased that operating limit, but at no time were standards off-site exceeded.

Mr. WYDEN. I have one other area with respect to the long-term operation of Purex, based on a forum I had last week. In particular, the answer that I got from Dr. Brewer with respect to problems of waste leaking from tanks was that there has been a problem with waste from your facilities leaking from tanks where it was placed.

Is that correct?

Mr. LAWRENCE. Yes, sir. The site was first built in 1943 to 1945, and subsequent to that, 149 single shell tanks were built, in which, in the early 1970's, leaks were discovered. Consequently, we have taken those tanks out of active use; we've removed the cesium and

strontium from them and essentially converted the inside to a dry salt cake form. And at the current time, all of those tanks are being completely isolated and stabilized. Of the 149, approximately I believe it's about 80 to 90, have been stabilized, and by the end of this decade, they will all be stabilized. All of our current active wastes, which are in liquid form, are in double-shell tanks which, the inner tank has in every case maintained its integrity and we've not had any leaks subsequent to that.

Mr. WYDEN. OK. Some of the toxic and radioactive waste that I'm talking about did seep into the ground, is that correct?

Mr. LAWRENCE. Yes, sir. And the radioactive constituents such as cesium, strontium, plutonium, based upon our measurements and calculations, have all been held within several feet of the soil at the bottom of the tank. Some liquid, which contains some tritium, has moved and continues to move. That is reported and the plume from that is included in this document that we monitored and reported.

Mr. WYDEN. But that, again, is just your measurements?

Mr. LAWRENCE. Yes, sir, but we have—

Mr. WYDEN. Has anybody else attested to that?

Mr. LAWRENCE. Well, sir, the monitoring that took place just at the end of July with the States of Washington and Oregon, and Greenpeace, any tritium going into the river will be detected and will be shown in that, so when the results are back from that, that'll be an independent verification of that as well.

I'd like to point out that, above the Hanford site, at the closest point where drinking water is extracted from the river, the drinking water is approximately one-half a percent of the drinking water standard as the radioactive constituent of the water at that point. One half of 1 percent. Below the site, it's 0.65 percent, so a very small fraction of radioactivity from tritium does enter the Columbia River, but it's still below the site at the closest point, where it would be the most concentrated, and is 0.65 percent of the allowable drinking water standard.

For comparison, however, in Seattle, at one of the drinking water extraction points, it's 1 percent, almost twice as much as below the Hanford site. So, those numbers do fluctuate, but we are well within natural fluctuation and background around the United States.

Mr. WYDEN. Mr. Buchanan, do you want to add to that?

Mr. BUCHANAN. Just that I want to remind Mr. Lawrence that I've seen a document recently signed by one of his managers, Mr. Hein, on the amount of liquid that's still located in those 149 single-shell tanks. It is radioactive. It does have the cesium and strontium removed.

But there is still 35 million gallons of liquid waste in those tanks that are in relatively insecure state; they have salts in them now, so they don't have as much chemical corrosion possibilities, but most of those tanks have already leaked, and they are still assumed to be leaking.

Mr. WYDEN. Well, that is certainly the impression that I got from Dr. Brewer last week. Mr. Lawrence, what you're saying point blank here, in your view, would contradict what Mr. Buchanan has seen in his documents, there are no tanks leaking now?

Is that your point?

Mr. LAWRENCE. Until all tanks are stabilized, I cannot say with absolute certainty that no tanks are leaking. There is no indication of any tanks leaking from those remaining tanks that have not been stabilized. However, I would—

Mr. WYDEN. How many tanks have not been stabilized?

Mr. LAWRENCE. I believe it's on the order of 60 or 70 have yet to be—we are working down that curve and approximately 90 have been stabilized.

And by the end of this decade, they will all be stabilized. I'd like to point out, because the figures that Mr. Buchanan states about the quantity of water included in those tanks is correct, the quantity of liquid, but there is no mechanism or driving force if you were to have that liquid escape from the tank, if you were to look at the salt cake, to the naked eye, you would say it's dry and there's no water present. Just as you and I are composed of 80 or 90 percent water; but we're not leaking away. So it's held but it's held within the salt cake, and there is no means, if you were to open a hole there, very little mechanism to push water or push any liquid out of these tanks. That was the result of our evaporation. We have essentially removed all the liquid that's possible to remove from the tanks, with the exception of the 60 we still have to go.

Mr. WYDEN. Mr. Buchanan seems to want to add something.

Mr. BUCHANAN. There's at least 15 million gallons of suppurate liquid floating on top of the material—by their own admissions. Now, that material also is not as corrosive as the material was when it was in its original state, but if there are leaks already in those tanks, that liquid can leak out, and also, new corrosion cracks can exist and move through those tanks.

So, I'm concerned about that liquid floating on top, as well as the stuff that's still in suspension.

Mr. WYDEN. Well, I'm sure that the citizens of the Pacific Northwest can't feel very comfortable to know that there are 60 to 70 tanks that have not been stabilized, according to your last comment, Mr. Lawrence, with the very obvious environmental consequences if a problem ensues. I really don't have any further questions. I think our panel has done an excellent job. Mr. Lawrence, again, I think you have brought the best possible case to a position that is just completely untenable. With the documented problems that we have seen, it is just no longer acceptable to our congressional delegation for you to hang up a big sign outside saying Trust Us, and for us to basically just say, that's good enough.

We have just heard too many instances of serious problems that relate to health and safety, after the Department has indicated that there are no problems. And what I hope you'll take back to your superiors, is that it's time to go the route of the U.S. Navy. That example, the way they've handled their situation, being the first to go to the Environmental Protection Agency and say, we need this because it will enhance our credibility and our believability on these matters, as an example of the way a Federal agency ought to handle it.

And I want to thank all of our witnesses. I'm going to do everything I can to generate bipartisan support for this legislation in the Congress. I'm very encouraged by the comments of our chairman.

And I thank our witnesses, and particularly the chairman for his time.

Mr. MARKEY. Thank you. You know, I'd like to just make a more sweeping statement with regard to the importance of the legislation that the gentleman has introduced, and that is that it's not intended just to cover the Hanford facility. It's intended to also cover the Savannah River facility in South Carolina, Los Alamos in New Mexico, the Fernold in Ohio, Oak Ridge in Tennessee, in addition to several other smaller laboratories and research centers.

And so, it's not so much just looking at Hanford and saying that perhaps some of the more suspicious incidents that might have occurred in 1984 or that pre-date that, might have caused the need for this legislation to be passed.

But it's a series of incidents that affect each one of the facilities, that cumulatively have given people concern that the credibility of the DOE, in its accumulation and subsequent dissemination of information, is not as forthcoming and thorough as it ought to be.

In 1983, the State of South Carolina and several environmental groups sued the Department of Energy, objecting to the lack of public involvement in DOE's conclusion that there was not significant environmental effects from the start-up of a plutonium production facility in South Carolina.

The DOE had issued itself a clean bill of health for the plant, without preparing a full environmental impact statement, a process which would have been open to public comment.

Now, whether the DOE's clean bill of health was justified or not, didn't matter, because it in fact did not satisfy the public's need to know and the public's need to, itself, be confident that in fact there was a clean bill of health that was justified.

Now, a former DOE official has testified in court that DOE withheld evidence of widespread radioactive contamination at the Savannah River plant, again, in South Carolina. The former official testified that DOE deliberately withheld information from a 1977 internal report that showed in 40 monitoring wells inside the complex that they were contaminated with radioactive materials.

The former official also said that when the contamination was discovered, that DOE personnel had 400,000 gallons of water pumped from one well and dumped in the ground so that subsequent testing would show a reduced contamination level in that well.

The DOE facility in Fernold, OH, Freedom of Information Act Request have revealed internal contractor reports to DOE disclosing spills and management fears of spills at the plant.

A 1981 report indicating well water around the facility had been contaminated was not released until January 1985, when Representative Tom Luken of the Energy and Commerce Committee on which Mr. Wyden and I serve, obtained the report and released it.

In addition, a 1980 GAO report that reviewed DOE's past Health and Safety Program, noted that inspections were generally not carried out and that those inspections that did take place, tended to underestimate the hazards posed by radiation incidents.

And in 1984, the Justice Department began investigating allegations that Energy Department and Union Carbide Corp. officials tried to cover up the extent of pollution created around the U.S.

Laboratory Complex at Oak Ridge, TN. In that case, the Energy Department and Union Carbide officials had internal reports as early as 1977, showing the extent of the contamination, yet most of the damaging information was not made public until May 1983.

And that's the issue. It's not Hanford alone, it's not some of these incidents that we've talked about here earlier, with regard to Hanford, but it gets back to the fundamental question of the ability of an agency, the ability of an individual to be able to monitor and objectively analyze the effects of their own conduct. As much as we would all like to walk around without any check on our activity, Congress is better off for having elections every couple of years.

You're better off for having Congress monitor your activities, and so the circle goes, not to the extent that anyone's individual integrity is being challenged, but rather that just in general, common sense tells you that there will be people, there will be institutions, there will be occasions when you will be tempted not to abide by the rules and regulations that have been established for all of us in general or for institutions in particular.

Back in the mid-1970's, we ran into the same kind of a problem. We found that the Atomic Energy Agency, the promoter of nuclear power in this country, was becoming so much of a cheerleader for the industry, that it had lost its objectivity, and its ability to monitor some of the defects, some of the drawbacks, some of the problems with the industry. So, as a result, we formed an independent agency, the Nuclear Regulatory Commission, so that the Atomic Energy Commission Agency could continue to promote nuclear power, but we would have a nuclear regulatory agency to monitor activities, to not serve as the promoter, but rather as the check.

Now, it took us about 20 years to realize that that was necessary, but in fact, commonsense should have told us right at the beginning, that you can't have a cheerleader and a monitor embodied in the same institution. You've got to have some division of responsibility. That's what we're saying here. It's not that we're questioning your integrity, questioning the abilities of people that work at your plant, or at Savannah River or at any of the other plants in the United States.

What we're really talking about is just a commonsense realization that there will be a temptation, especially on the part of those people who make mistakes, because we have, in many instances, private contractors involved in these incidents, that have big bucks involved, and just the treatment, the handling that Union Carbide has demonstrated in this past week or so, in West Virginia, gives us an insight, a window into what the real temptation will be, which is to cover up, not to give the public information and to hope that the problem can be solved internally.

When in fact there is a public right to know; there is a community right to know. We're not asking to let Dr. Weiner walk through your facility or Mr. Buchanan walk through your facility. We're asking that the Environmental Protection Agency, another Government agency, with the people who are given the proper security clearance, be allowed to serve as a check on you. To be able to monitor your activities.

If you're below the standards as you say you are, there will be no problem. There is no question, and I don't think that you ought to,

as a result, fear having that kind of injection of a second agency into your activities. If there is problems, then of course you will have reason to fear, you will have some direct public consequence, if violations have been identified.

But I think, on the whole, that the precedent that was set in the division of the Atomic Energy Agency from the Nuclear Regulatory Commission was a wise one, the precedent really does set a commonsense solution to problems like this.

Both of them have top security clearance, both of them have an interest in ensuring that safe nuclear power is put on-line, but they are independent and they have individual agendas that conflict with each other in terms of what their role is, but not necessarily with what the best interests of the country is, and that's all we're really asking from you.

And it's hard for us who sit up here to understand what the problem would be, if in fact rules and regulations are being complied with, and having that kind of independent government agency move in, with no extra cost. We're saying, move the monitoring responsibilities over from DOE, over to the EPA, just different people with the same kind of salaries and money being expended, but with a different governmental agency chief running them, so that we have that independent check that adds to your credibility, adds to public confidence, and it ensures that you don't have the kind of rumors rumbling on the winds of communities with regard to potential accidents or spills or leaks that might have occurred.

It helps everybody. It helps everybody sleep easier at night, and it makes your job a lot easier.

And for the life of me, I just can't understand why you're fighting something that in the long run would help you out and make it a lot easier for you to just conduct your day-to-day operations.

Mr. LAWRENCE. I have to have monitoring capability at my command and disposal, to ensure the protection and safety of workers and the public around the plant. Consequently, we would have to maintain monitoring capability of our own under our control. Consequently, EPA doing it would be a duplication.

Now, that could be a decision made by the Congress to appropriate the extra funds to have that happen, but I don't think it's correct to say that it would be at no extra cost.

Mr. MARKEY. Well, I think that it might be possible to work out that kind of coordination that would reduce dramatically any need for duplication. I don't think that that's necessarily the case. I think that this is just more or less a case of a will to cooperate politically between two major agencies, and if there was that desire to do so, then I don't think a duplication is necessary.

There might be some additional incremental costs, but I think that overall there could be that kind of data sharing that ensures the integrity of the data which is being gathered by DOE, but that allows EPA to play an integral role in the actual development of and monitoring of that information.

And I don't think that any estimation of a doubling of cost is in fact anywhere near the case.

Mr. WYDEN. Will the chairman yield? Will the chairman yield on that point?

Mr. MARKEY. I'll be glad to yield.

Mr. WYDEN. The bill specifically doesn't call for additional funds, nor do I think that any of them would be necessary. What we're talking about is taking the pot of money that the Department of Energy, in your case, the Hanford facility, gets and in effect coordinating the job with EPA, the Environmental Protection Agency.

And EPA has informed my staff right now that there is no coordinated or standardized monitoring program in place for the DOE facilities, and I think that the existing apportionment of funds the existing dollars for monitoring is very adequate. I don't plan to support a call for additional funds. What we're essentially talking about is taking that money that goes to the Department of Energy and in effect, the Department and the Environmental Protection Agency would set up a joint kind of effort, so that there would be ultimately an independent analysis.

And I appreciate the chance, for the record, Mr. Chairman, to make it clear that my bill would cost no additional funds nor do I support with a \$200 billion Federal deficit, just opening up the Federal purse for efforts that are duplicative.

Mr. MARKEY. OK. Thank you, very much. That concludes our hearing. I would like to thank the witnesses who testified today. This is an issue of grave and lasting concern to the people of Oregon and Washington.

This Hanford Nuclear Reservation is 500 square miles in size. We have another word back in the east in Massachusetts and Rhode Island for an area that large; we call it a State. This is a tremendous area of the United States, and the kinds of activities that it conducts, and the kinds of risks that the public is potentially exposed to are very serious.

The testimony which we heard today will contribute greatly toward the construction of legislation which I think will be able to gather great support because of the consequences when in fact mistakes are made, albeit inadvertently, in the monitoring of activities of this nature.

So we thank the gentleman from Oregon for inviting us here. This has been a very valuable, informative and I think tremendously important hearing, and with that, the hearing is adjourned.

[Whereupon, at 12 noon, the subcommittee was adjourned.]

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